Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

a 41-9
R 315aR
aRS 91-52-1

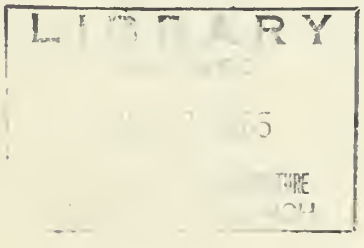
ARS 91-52-1
Slightly Revised JULY 1965

progress report

COOPERATIVE

STATE-FEDERAL

BRUCELLOSIS ERADICATION



calendar year 1964

U.S. DEPARTMENT OF AGRICULTURE

Agricultural Research Service

The data in this report have been compiled on a National and individual State level for the calendar years 1963-1964, to show a comparison of the accomplishments, and to depict the trend of the various program activities through the cooperative efforts of the State-Federal brucellosis eradication program.

Reported by

C. K. Mingle, D. V. M.

Animal Disease Eradication Division
Agricultural Research Service
United States Department of Agriculture
Hyattsville, Maryland 20781

PROGRESS REPORT ON THE COOPERATIVE STATE-FEDERAL BRUCELLOSIS ERADICATION PROGRAM, CALENDAR YEAR 1964*

The Nation is moving steadily toward its goal of brucellosis eradication under the cooperative State-Federal brucellosis eradication program. By the close of 1964, nearly 85 percent of the counties had attained certified status and over 10 percent of the counties had attained Certified Brucellosis-Free Area status. The speed with which the national goal is reached depends upon the effective use of the measures already at our disposal. As the incidence of the disease decreases, greater effort must be directed toward locating and eliminating small pockets of residual infection. The screening procedures and the problem herd program are essential tools in this phase of the program. Maximum utilization of these measures will provide the means to eradicate brucellosis from the cattle population by 1972.

Certified Brucellosis-Free Areas

During the calendar year 1964, more counties achieved Certified Brucellosis-Free status than those achieving initial Modified Certified Brucellosis Area status. There were 104 free counties established and 76 modified certified counties. However, 8 counties lost their modified certified standing leaving a net gain of only 68.

In addition to the accomplishment of qualifying over 100 counties for Certified Brucellosis-Free Area status, the entire State of Utah has attained this status. This was the first major beef producing State to qualify as free under this program. This achievement proves that the Market Cattle Testing program is an effective screening test for the detection of brucellosis when diligently used. Utah is to be further commended for its accomplishment in attaining Validated Brucellosis-Free Herd status. Utah became the first State to eliminate brucellosis from both cattle and swine herds.

Connecticut has also achieved recognition as a brucellosis-free State. The remaining two modified certified counties completed the necessary testing to qualify as brucellosis-free counties during December 1964. The applications were processed and approved on January 15, 1965, making Connecticut the fifth State to eradicate bovine brucellosis.

Modified Certified Brucellosis Areas

Four States completed the requirements for statewide Modified Certified Brucellosis Area status in 1964. Montana, Illinois, Ohio, and North Dakota attained this status and are now concentrating on the task of eliminating the last foci of infection. Thirty-eight States have been initially certified. However, both Indiana and Arkansas, unfortunately, lost their Modified Certified Brucellosis Area status when one county in each State failed to qualify for recertification on time. Indiana lost its certification for the second time because a high rate of infection was found in Warren County. Complete area testing is now in progress to requalify this county for modified certified status.

*Presented at the Annual Meeting of the National Brucellosis Committee, Livestock Conservation Inc., St. Paul, Minn., February 23, 1965.

The loss of this county illustrates the weakness of the former provision in the Brucellosis Uniform Methods and Rules which permitted areas to qualify for recertification on the basis of a 20-percent test of the cattle in 20 percent of the herds. This method was discontinued on July 1, 1964. The situation in Arkansas is different but illustrates the deleterious effect one objector may have on the status of the entire State. The recertification of Cross County was delayed indefinitely pending a court decision concerning the objection of a rancher to test and remove reactors from his infected herd.

Milk Ring Test

Since the adoption of the brucellosis ring test (BRT) as a screening procedure for detecting dairy herds suspected of being infected with Brucella spp., the rate of infection among dairy herds has been drastically reduced. The effectiveness of this program is related to the interval between tests as well as the size of the herds being sampled. The efficiency of the ring test increases as the interval between tests is reduced from 6 to 4 months and is further improved when reduced to 3-month intervals. Forty-five States are now conducting the ring test either three or four times a year but only 16 of these States are performing the test at three month intervals. The States that are still conducting the ring test less than three times a year are strongly urged to consider the benefits to be derived from an increased frequency in testing. Thirty-five States reported 100-percent coverage of the diary herds by the ring test and six additional States reported a coverage of 99 percent or better under this screening procedure, but the remaining states need to strengthen the ring test program to maintain maximum surveillance of the dairy herds. Extensive coverage under the ring test screening procedure is the most economical means to detect new outbreaks of brucellosis in this class of cattle. Almost half of the states reported that the ring test is utilized to screen herds marketing cream. The extent of the coverage on cream shippers varied from state to state with only four cream patrons being screened in one state to a maximum of 25,000 in another.

The greatest area for improving surveillance procedures under the ring test program appears to be in the interpretation of the significant level of reaction. This needs to be more closely correlated with the number of animals contributing to the milk sample. Forty-nine States and Territories are utilizing the Babcock sample or a fresh tank sample for ring test purposes but twenty-three states ignore the 1+ ring test reaction. Dilution factors, storage time and temperature, and preservatives can effect the sensitivity of the ring test. In view of this, failure to investigate all possible leads resulting from reactions observed on the brucellosis ring test could delay the detection of a newly infected herd. It is recommended that all States review their procedures in the application of the ring test and make whatever changes are necessary to gain the maximum benefit from this phase of the program.

Market Cattle Testing Program

The market cattle testing (MCT) program has expanded rapidly in the last few years and during 1964 a definite trend has been established toward the collection of blood samples at the time of slaughter rather than at auction markets. A tremendous potential to screen eligible cattle from beef herds exists under this program. In the few years since the development of the market cattle testing program, significant progress has been made in range areas by detecting and eliminating brucella infection promptly. The

continual surveillance which is possible under this program is as important to the beef areas as the ring test is in the dairy areas. In many of the States the market cattle program compliments the ring test by screening a number of the dairy animals previously covered under the ring test. Fourteen States reported that over 50 percent of the market cattle test samples were drawn from dairy type animals and an additional 11 States reported that between 10 and 50 percent of the MCT samples were collected from this class of cattle. The duplicate coverage is not necessary nor desirable from a cost standpoint in those States which have a well developed ring test procedure although animal identification is important for other cattle disease program activities.

Since March 15, 1963, 634 counties have been recertified under the market cattle testing program without requiring "down the road" testing to verify the low incidence of brucellosis. A recent amendment to the Brucellosis Uniform Methods and Rules now provides an alternate procedure whereby the MCT program can be even more extensively used in range and semirange areas to initially certify and recertify these areas as brucellosis-free. One of the serious handicaps under the former Brucellosis Uniform Methods and Rules to certify range and semirange areas as brucellosis-free was the necessity of verifying that each and every herd in the county was included in a screening program. The success of the market cattle testing program has proved that it is not necessary to account for each and every herd through posting of the negative test results if the percentage of eligible beef cattle screened each year is sufficiently high and effective means are available to trace not less than 90 percent of MCT reactors to a herd of origin.

Under the MCT system the status of many of the animals cannot be determined until after the animal has been traced to a herd of origin and an investigation conducted. The number of animals reclassified as suspects varies from State to State, depending to a large extent upon the level of calf vaccination which has been practiced in previous years. Twelve States have reported that they reclassified over 50 percent of the animals showing a reaction on the MCT test at a dilution of 1:100 or higher. Ten States have reported reclassifying between 10 and 50 percent of the animals showing a reaction in this range while only 17 States have reported reclassifying less than 10 percent of those detected.

The potential of the market cattle testing program has not been approached. It is anticipated that this program can be expanded from approximately one million blood samples collected at slaughter in 1964 to over five million in the next few years. Screening at this level will provide an excellent surveillance of beef herds in range and semirange areas that cannot be conveniently blood tested on the premises to assure eradication of brucellosis.

PROBLEM HERD PROGRAM

The problem herd program is now in operation in 24 States and Puerto Rico. During the past year, the program was initiated in one State and strengthened in nine States by the assignment of trained personnel in those areas. Continued expansion of this phase of the eradication program is anticipated as other certified States are able to add brucellosis epidemiologists to their staffs.

An intensive training course in brucellosis epidemiology has been developed in cooperation with the University of Minnesota. To date, two groups, totaling 10 men, have participated in this course. The application and interpretation of the supplemental tests used in problem herd studies is emphasized and correlated with examples of their usefulness in various types of problem herds.

The value of the problem herd program in eliminating infection from herds with persistent or sporadic brucellosis problems has been proven in all areas. Several hundred herds of this type have been freed of the disease in less than 1 year after enrolling in the program. In most instances, a combination of supplemental serologic tests and bacteriologic examinations of secretions detected carrier animals that did not react at diagnostic levels on the standard tests. Other cases involved perpetuation of the infection within the herd among young vaccinates below routine testing age.

The frequency of the latter finding made it necessary to re-evaluate the recommendations concerning exempting vaccinates less than 30 months of age from testing requirements. The change in the Uniform Methods and Rules in 1963, was based upon these results.

Brucella infections among vaccinated cattle continues to be a complicating factor in problem herd studies. Differentiation between vaccination reactions and infection reactions is difficult and costly. Bacteriologic methods are often used and a failure to isolate Brucellae is often mistaken for freedom from infection. Consequently, it is imperative to publicize the limitations of vaccination as well as its advantages.

Brucella isolation reports were reviewed from 24 States which included bacteriologic procedures in problem herd studies. Although the vaccination status was not indicated for many of the animals, 304 were identified as vaccinates and 226 were identified as non-vaccinates out of a total of 907 culturally positive cattle.

Of the 530 cultures isolated from infected animals of known vaccination status, 57% were from vaccinates. Unfortunately, serological results for each animal from which Brucellae were isolated were not reported, however, this information was available for 286 of the 304 vaccinates. The reactions on both the plate and the tube test failed to identify 85, or almost 30%, of these animals as reactors under the standard differential interpretation for vaccinates.

A closer examination of the desirability of continued vaccination in areas with extremely low incidences of brucellosis must be weighted against the limitations and disadvantages as shown in these data. We cannot afford to overlook the possibility of masking infection under the guise of vaccination, particularly in areas where potential exposure to virulent Brucellae is minimal.

Another type of problem herd--those with a history of suspicious ring tests, but no infection disclosed on the blood--has been extensively studied. Again, sera and milks from several hundred herds were subjected to supplemental tests and bacteriologic methods with exceptional results. The majority of these herds were quickly removed from the problem herd file following the detection of one or more animals with positive supplemental test reactions and/or positive milk reactions. Brucella was isolated from the tissues or milk of many of these animals. These herds were proven infected although the individual carriers were apparently not shedding large numbers of organisms.

The success of the epidemiological approach in eliminating brucellosis from herds with persistent infection has been extremely rewarding. Many certified States are now applying the knowledge and the procedures developed in this phase of the eradication program in detecting and eliminating other obscure reservoirs of infection responsible for appearance of newly infected herds in free areas and studying the significance of suspect animals in otherwise negative herds.

Swine Brucellosis

The swine brucellosis eradication program has expanded rapidly during 1964. As of December 1, 1964, 1940 herds in 40 States and Puerto Rico have been validated. This is an increase of 726 herds since the end of the last calendar year. The most notable achievements in this phase of the total program occurred when Vermount and Utah became the first and second States respectively, to attain validated Brucellosis-Free Area status.

Three other States have validated one or more counties; California showed the most progress since last year, with an increase of 15 counties in this status. The emphasis on a swine brucellosis eradication program should be closely allied to the bovine brucellosis eradication effort. At this point in the total eradication program the greatest accomplishments toward the reduction of swince brucellosis can be made by concentrating on educating the purebred swine growers as to the benefits of obtaining a validated herd. The funds available for this phase of the program will be more effectively utilized if the validation of herds rather than counties is stressed, since the majority of the replacement animals will originate from free herds.

The brucellosis card test has played a vital role in the swine validation program. Many producers reluctant to subject their herds to a blood test when the anterior vena cava bleeding technique is used have been enthusiastic about the use of the card test. The rapidity with which the test results are known under field conditions on a herd basis has been a distinct advantage in most areas.

The swine industry must be made aware of the dangers of swine brucellosis as a primary cause of undulant fever in the United States. As in calendar year 1963, a significant number of the diagnostic cases of human brucellosis could be traced to contact with infected swine.

Vaccination

Many areas of the United States have reduced the incidence of brucellosis to the point where they are now either free or nearly free of this disease. The majority of these areas have developed procedures to maintain effective surveillance of the cattle population. In addition, most of these areas have instituted and developed the problem herd program which effectively supplements the standard surveillance procedures by promptly investigating all cases which could be indicative of brucella infection. Continued emphasis on calf vaccination in such areas can be a liability rather than an asset because of the extreme difficulty in distinguishing between vaccination reactions and active brucella infection. One of the significant findings of the problem herd studies was the inability to eliminate the disease from many of the infected herds because infected vaccinated animals were not removed due to the incorrect interpretation of the reaction as a residual vaccination titer. In areas with an extremely low incidence of brucellosis, the exposure potential for nonvaccinated animals can be minimized with the effective surveillance programs, thus eliminating the necessity for artificial protection through vaccination.

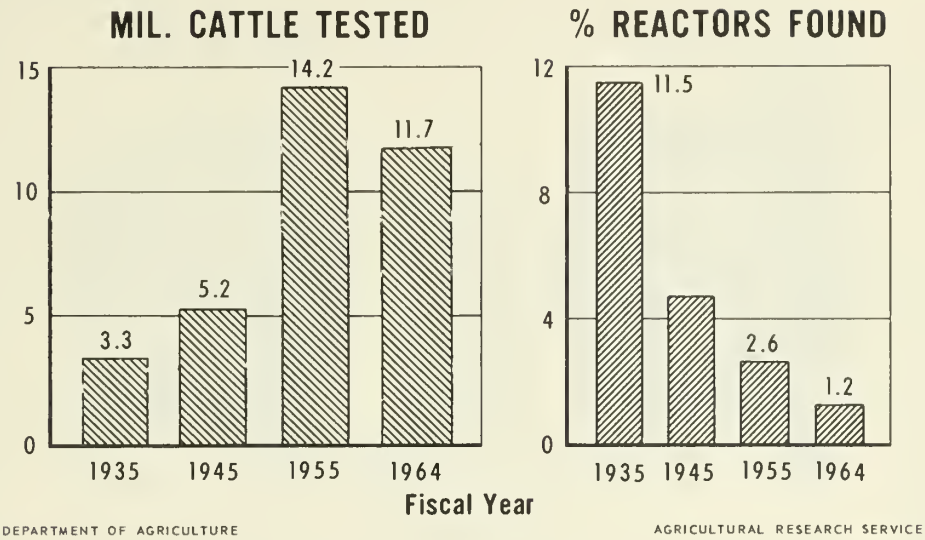
COOPERATIVE BRUCELLOSIS ERADICATION PROGRAM DATA

	Calendar Year		Percent Change for 1964
	1963	1964	
Blood Tests			
*Herds-Lots	1,934,146	1,846,960	-4.5
*Reactor Herds-Lots	66,156	60,799	-8.1
Percent	3.4	3.3	(-0.1)
Cattle Tested	11,412,699	11,663,900	+2.2
Reactor Cattle	132,184	135,429	+2.5
Percent	1.16	1.16	(0.00)
Ring Test			
Herd Tests	1,670,292	1,815,644	+8.7
Suspicious Herd Tests	17,201	16,874	-1.9
Percent	1.0	0.9	(-0.1)
Vaccinations	6,962,406	7,154,257	+2.8
Certification of Counties			
Modified Certified			
New and Reinstated	123	76	
Removed	6	8	
Total	2,377	2,341	
Certified Brucellosis-Free			
New	83	104	
Total	233	337	
Total Certified Counties	2,610	2,678	

*Tennessee MCT lots omitted.

( ) % difference

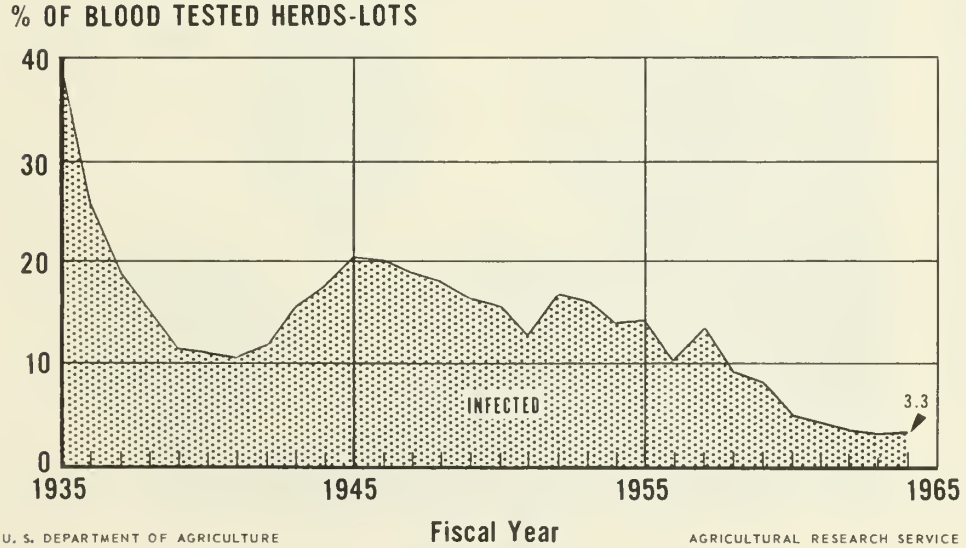
BLOOD TESTING: CATTLE



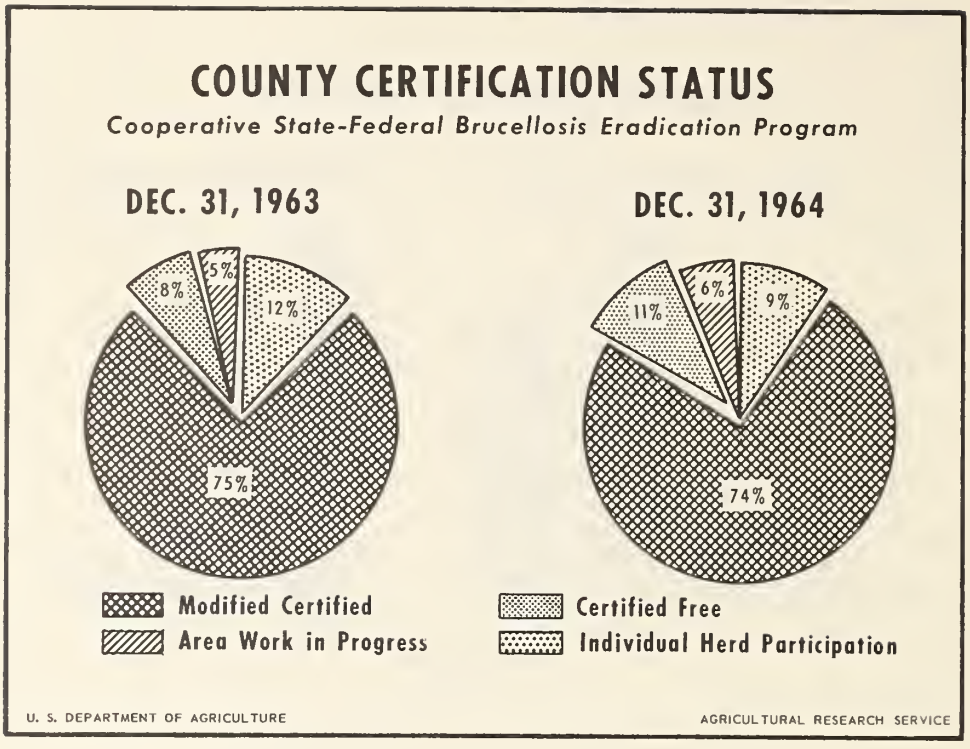
U. S. DEPARTMENT OF AGRICULTURE — AGRICULTURAL RESEARCH SERVICE

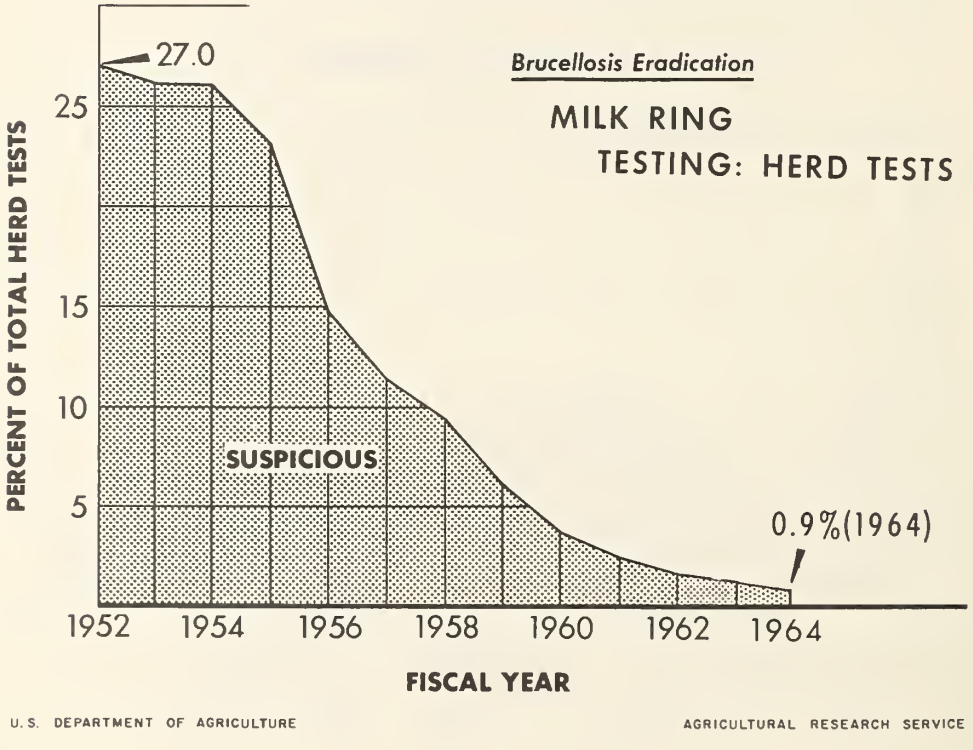
BRUCELLOSIS ERADICATION

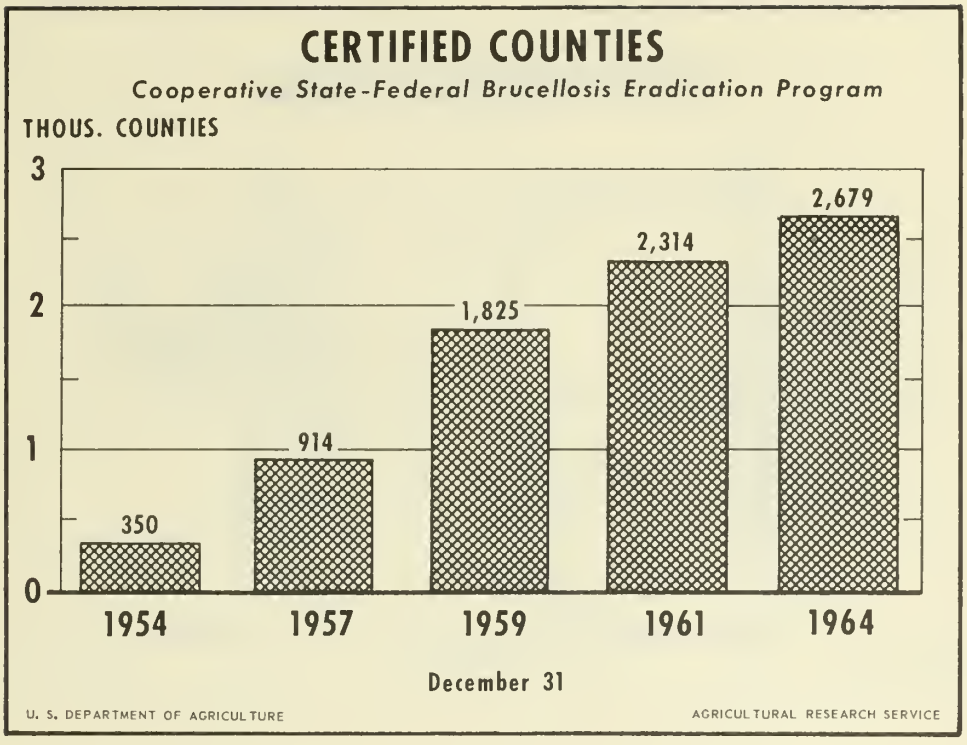
BLOOD TESTING: HERDS-LOTS

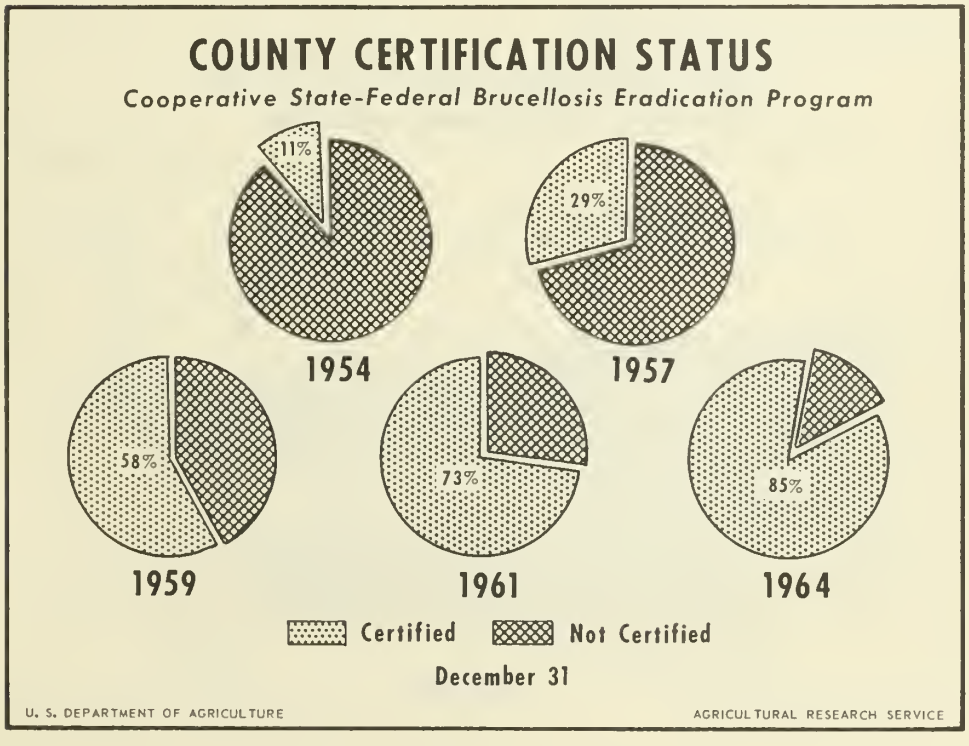


U. S. DEPARTMENT OF AGRICULTURE — AGRICULTURAL RESEARCH SERVICE

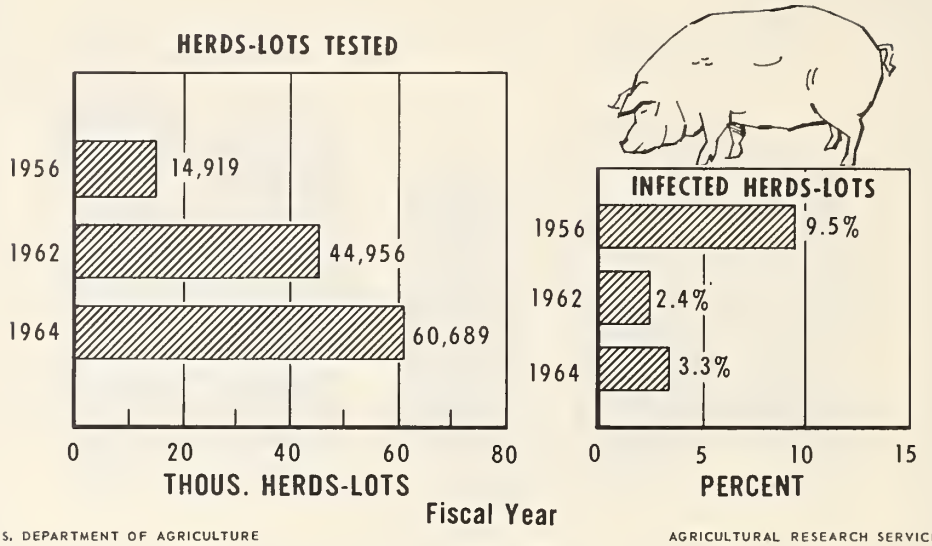

COUNTY CERTIFICATION STATUS
Cooperative State-Federal Brucellosis Eradication Program
DEC. 31, 1963
DEC. 31, 1964
8%
5%
12%
75%
11%
6%
9%
74%
Modified Certified
Area Work in Progress
Certified Free
Individual Herd Participation
U. S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE


Brucellosis Eradication
MILK RING
TESTING: HERD TESTS
PERCENT OF TOTAL HERD TESTS
27.0
25
15
10
5
SUSPICIOUS
0.9%(1964)
1952
1954
1956
1958
1960
1962
1964
FISCAL YEAR
U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE


CERTIFIED COUNTIES
Cooperative State-Federal Brucellosis Eradication Program
THOUS. COUNTIES
3
2
1
0
350
914
1,825
2,314
2,679
1954
1957
1959
1961
1964
December 31
U. S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE


COUNTY CERTIFICATION STATUS
Cooperative State-Federal Brucellosis Eradication Program
11%
29%
58%
73%
85%
1954
1957
1959
1961
1964
Certified
Not Certified
December 31
U. S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE

BLOOD TESTING: SWINE

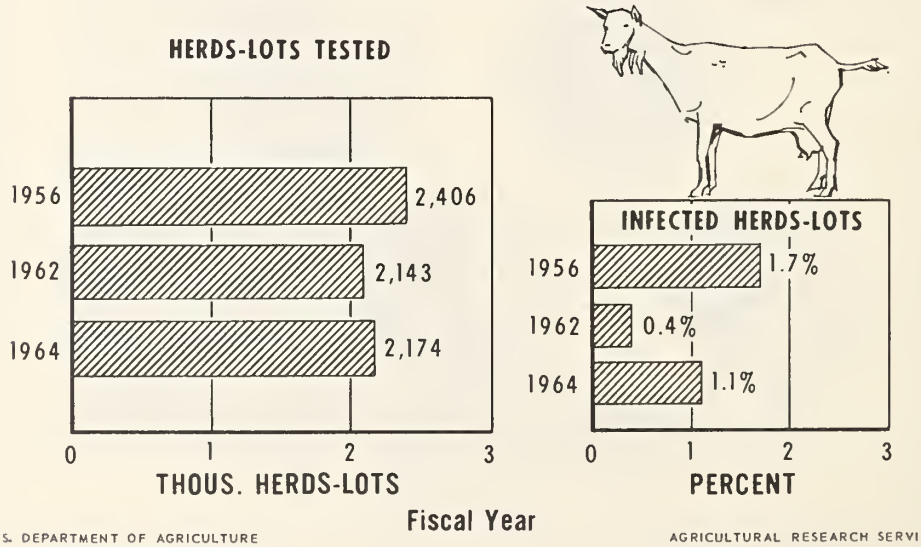


U. S. DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

BRUCELLOSIS ERADICATION

BLOOD TESTING: GOATS

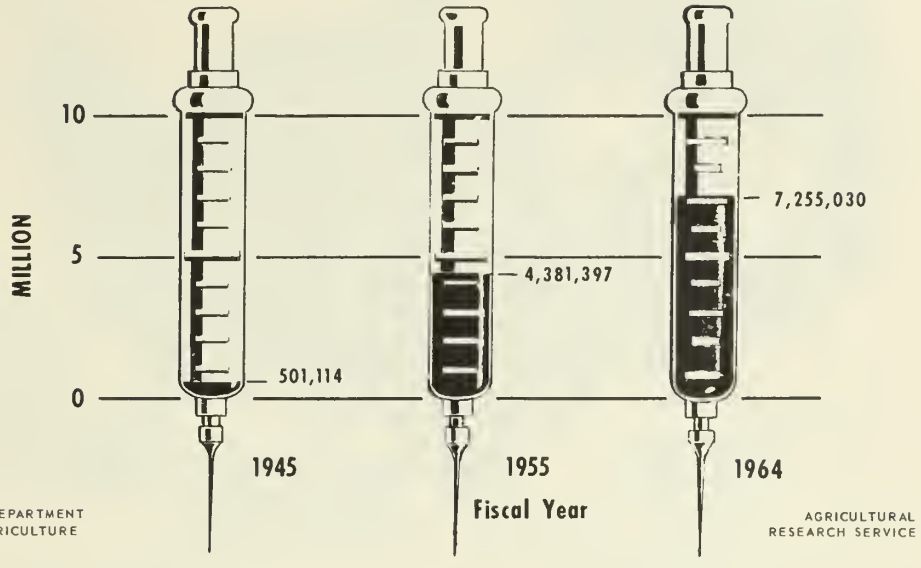


U. S. DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

BRUCELLOSIS ERADICATION

CALVES VACCINATED

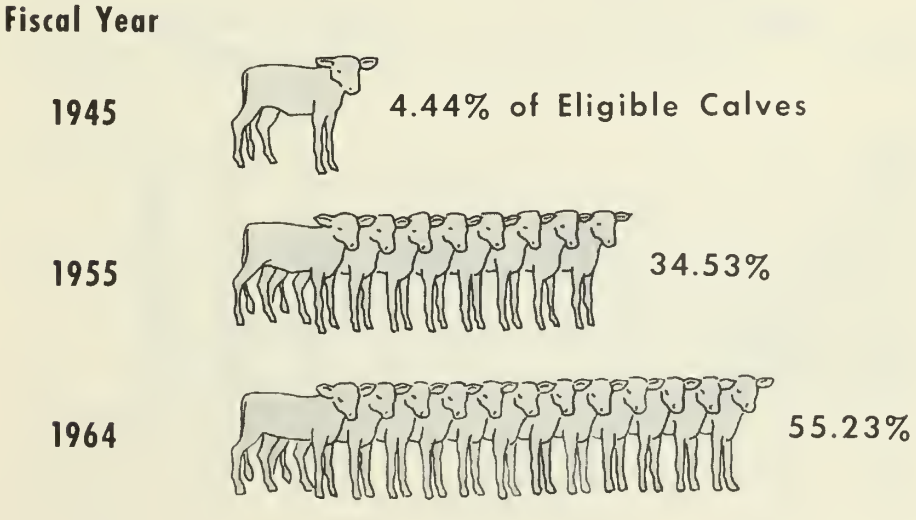


U. S. DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

BRUCELLOSIS ERADICATION

OFFICIAL CALF VACCINATIONS

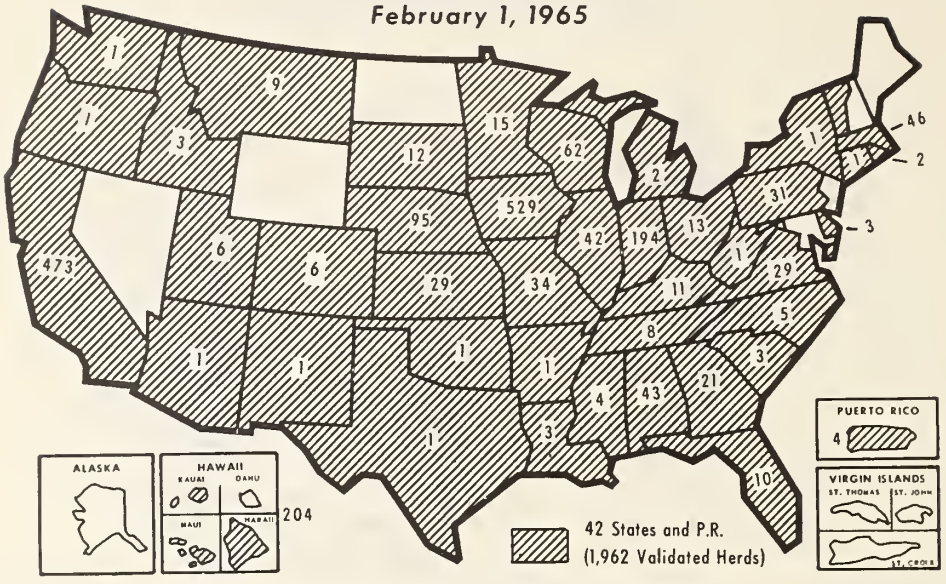


U. S. DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

STATES WITH VALIDATED BRUCELLOSIS-FREE SWINE HERDS

February 1, 1965

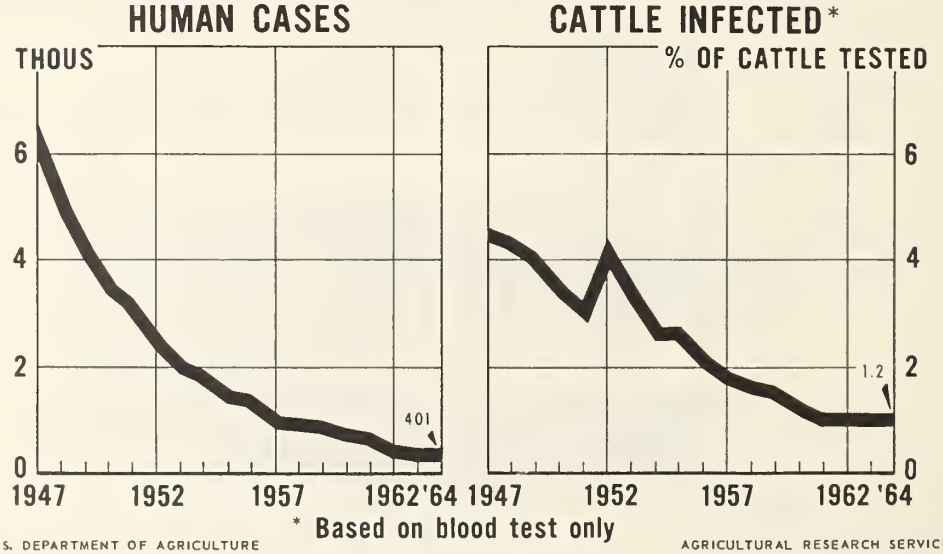


FIVE STATES WITH A TOTAL OF 74 VALIDATED BRUCELLOSIS-FREE COUNTIES; CALIFORNIA – 34, GEORGIA – 1, HAWAII – 1, UTAH – 24, VERMONT – 14.

U. S. DEPARTMENT OF AGRICULTURE — AGRICULTURAL RESEARCH SERVICE

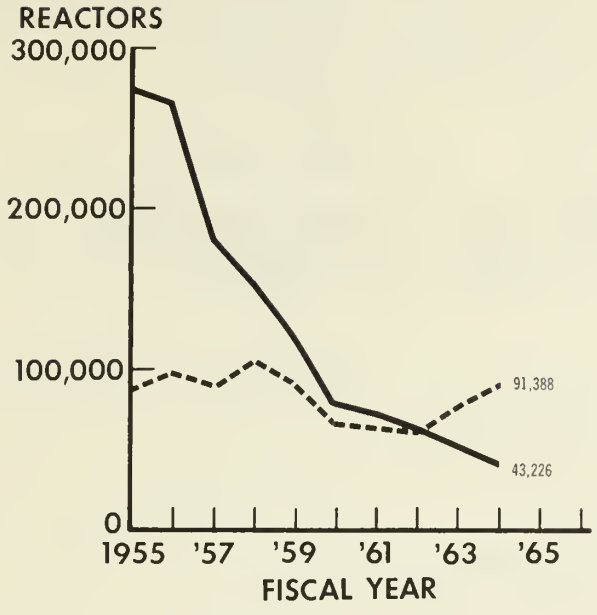
BRUCELLOSIS ERADICATION

BRUCELLOSIS-UNDULANT FEVER



U. S. DEPARTMENT OF AGRICULTURE — AGRICULTURAL RESEARCH SERVICE

BRUCELLOSIS ERADICATION



REACTORS FOUND

— IN 36 STATES P.R., & V.I (Certified as of June 30, 1964)

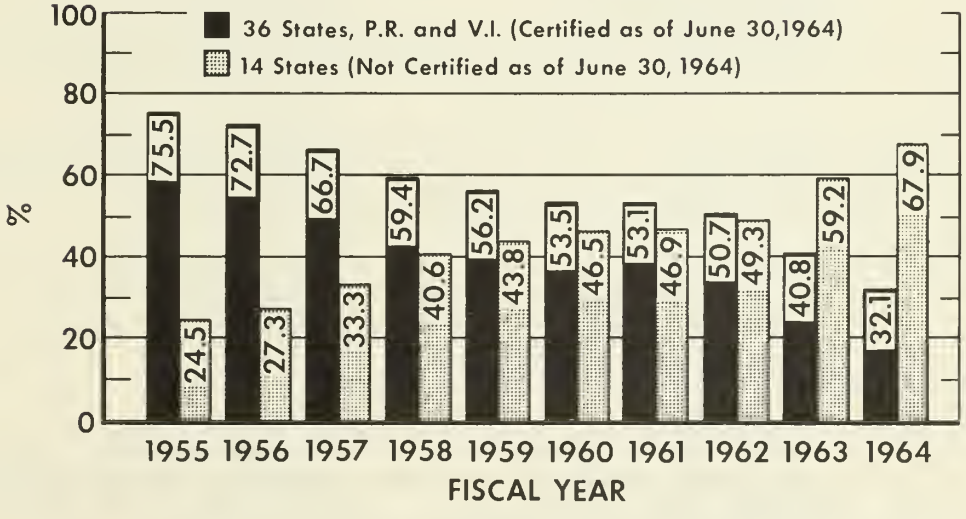
-- IN 14 STATES (Not certified as of June 30, 1964)

U.S. DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

BRUCELLOSIS ERADICATION

REACTORS FOUND EACH YEAR (Percent of U.S. Total)



U.S. DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

A brief resume of the brucellosis activities in each State is presented for your information. If more detailed information on the brucellosis eradication program for an individual State is desired it is suggested that the Veterinarian in Charge, Animal Disease Eradication Division or the State Official in Charge of the animal disease program as listed below be contacted.

State	Federal Veterinarian in Charge	State Official
Alabama	B. N. Lauderdale 401 New Post Office Bldg. Montgomery, Ala. 36104	John G. Milligan P. O. Box 220 Montgomery, Alabama 36104
Arizona	E. R. Mackery Post Office Box 7397 4004 North 7th St. Phoenix, Arizona 85011	William M. Thompson 1521 West Jefferson Phoenix, Arizona 85007
Arkansas	Paul Becton Post Office Box 3548 Room 5506, Federal Bldg. Little Rock, Arkansas 72203	R. M. Thomas P. O. Box 2821 Little Rock, Arkansas 72203
California	J. H. Wommack Room 4506 650 Capitol Ave. Sacramento, California 95814	H. G. Wixom, Chief Division of Animal Industry 1220 N Street Sacramento, Calif. 95814
Colorado	E. S. Cox 13037 Federal Bldg. U.S. Court House 1961 Stout Street Denver, Colorado 80202	William C. Tobin Room 420 1525 Sherman Street Denver, Colorado 80202
Connecticut	Walter Ferrall Room 258-262 State Office Bldg. Hartford, Connecticut 06115	Jean V. Smith Room 287 State Office Bldg. Hartford, Conn. 06115
Delaware	D. F. Schwindamin Room 3 Agricultural Annex Bldg. Dover, Delaware 19901	Robert L. Ricker State Board of Agriculture Dover, Delaware 19901
Florida	J. B. Healy Post Office Box 4129 240 P. O. Building Jacksonville, Florida 32201	C. L. Campbell P. O. Box 1509 Tallahassee, Florida
Georgia	C. J. Mikel Room 410 Bona Allen Bldg. 133 Luckie St., N.W. Atlanta, Georgia 30303	O. D. Dye Capitol Square Atlanta, Georgia 30334
Hawaii	J. H. Slack 819-825 Keeaumoku Street Honolulu, Hawaii 96814	Ernest H. Willers P. O. Box 5425 Pawaa Station Honolulu, Hawaii

State	Federal Veterinarian in Charge	State Official
Idaho	A. P. Schneider, Director Idaho State-Federal Cooperative Livestock Regulatory Programs 716 Idaho Street Boise, Idaho 83702	A. P. Schneider same
Illinois	Milo Johnson P. O. Box 2149 Springfield, Illinois 62705	Paul B. Doby Emmerson Bldg. State Fair Grounds Springfield, Ill. 62705
Indiana	L. R. Barnes 311 West Washington St. Room 210 Indianapolis, Indiana 46204	David L. Smith 801 St. Office Bldg. Indianapolis, Indiana 46204
Iowa	G. E. Blake 1115 Grand Avenue Des Moines, Iowa 50309	M. E. Pomeroy State House Des Moines, Iowa 50319
Kansas	D. O. Manley P. O. Box 1518 Room 700 Capitol Federal Bldg. Topeka, Kansas 66601	A. G. Pickett Livestock Sanitary Commissioner State Office Bldg. Topeka, Kansas 66612
Kentucky	L. T. Fisher P. O. Box 399 105½ St. Clair St. Frankfort, Kentucky 40601	R. J. Henshaw Capitol Annex Frankfort, Kentucky 40601
Louisiana	A. G. Pass 1755 Florida Street 302 Audubon Bldg. Baton Rouge, La. 70821	F. B. Wheeler P. O. Box 4003 Capitol Station Baton Rouge, La. 70821
Maine	C. W. Wilder 204 Post Office Bldg. Augusta, Maine 04330	Francis B. Buzzell State Office Building Augusta, Maine 04330
Maryland	E. B. Jasper 510 Hartwick Bldg. 4321 Hartwick Road College Park, Md. 20740	T. A. Ladson, Director Md. Livestock Sanitary Service Symons Hall Univ. of Maryland College Park, Maryland 20740
Massachusetts	E. R. Coon 802 Customhouse Bldg. Boston, Massachusetts 02109	Edward M. Dwyer, Director Livestock Disease Control 41 Tremont Street Boston, Massachusetts 02108

State	Federal Veterinarian in Charge	State Official
Michigan	C. L. Hendee Sixth Floor Lewis Cass Bldg. Lansing, Michigan 48913	John F. Quinn 6th Floor Lewis Cass Bldg. Lansing, Michigan 48913
Minnesota	D. F. Werring 555 Wabasha Street St. Paul, Minn. 55102	J. G. Flint, Secretary and Executive Officer 1246 University Ave. St. Paul, Minn. 55104
Mississippi	L. J. Pate P. O. Box 1120 320 Milner Bldg. Corner Lamar and Pearl Sts. Jackson, Mississippi 39205	Vernon D. Chadwick P. O. Box 916 Jackson, Mississippi 39205
Missouri	L. F. Van Gorder P. O. Box 627 203-205 P. O. Bldg. Jefferson City, Mo. 65102	G. C. Stiles P. O. Box 630 Jefferson Bldg. 13th Floor Jefferson City, Mo. 65102
Montana	O. J. Halverson P. O. Box 917 200 Steamboat Block 616 Helena Avenue Helena, Montana 59601	John W. Safford Capitol Station Helena, Montana 59601
Nebraska	E. H. Nordstrom P. O. Box 1866 303 Farmers Mutual Ins. Bldg. 1220 "J" Street Lincoln, Nebraska 68501	Lee A. Wilcox Room 1124-26 State Capitol Bldg. Lincoln, Nebraska 68501
Nevada	E. M. Joneschild 1557 South Wells Ave. Reno, Nevada 89502	John L. O'Harra, Director P. O. Box 1209 Reno, Nevada 89502
New Hampshire	C. W. Wilder 204 Post Office Bldg. Augusta, Maine 04330	Clarence B. Dearborn Room 102 State House Annex Concord, New Hampshire
New Jersey	R. L. Alkire P. O. Box 938 238 P. O. Bldg. Trenton, New Jersey 08605	E. L. Brower One West State St. Room 602 Trenton, New Jersey 08605
New Mexico	R. L. Pyles P. O. Box 464 4010 New Fed. Office Bldg. 517 Gold Avenue, S. W. Albuquerque, New Mexico 87103	J. E. Kleck Box 1296 Albuquerque, N. Mex. 87103
New York	Dale Suplee Building 8 State Campus Albany, New York 12226	Grant S. Kaley 19th Floor State Office Bldg. Albany, New York 12226

State	Federal Veterinarian in Charge	State Official
North Carolina	W. W. Harkins 320 Agricultural Bldg. Raleigh, North Carolina 27603	H. J. Rollins P. O. Box 670 Room 323 Agricultural Bldg. Raleigh, N. C. 27602
North Dakota	G. W. Spangler Post Office Box 639 220 E. Rosser Avenue Bismarck, North Dakota 58502	Dean E. Flagg State Capitol Bismarck, N. D. 58502
Ohio	Paul H. Kramer 438 Old Post Office Bldg. 3rd and State Sts. Columbus, Ohio 43215	Harry E. Goldstein Room 720 Ohio Dept. Bldg. 65 S. Front Street Columbus, Ohio 43215
Oklahoma	L. N. Miller 5411 New Federal Bldg. 200 Northwest 4 Oklahoma City, Oklahoma 73102	J. H. Brashear 122 State Capitol Bldg. Oklahoma City, Oklahoma 73102
Oregon	A. G. Beagle 1178 Chemeketa, N. E. Salem, Oregon 97310	Glen B. Rea, Chief Veterinary Division Oregon Dept. Agri. Salem, Oregon 97310
Pennsylvania	R. W. Boone P. O. Box 2065 2301 N. Cameron St. Harrisburg, Pa. 17105	J. C. Shook, Director Bureaus of Animal Industry Room 223 St. Office Bldg. Harrisburg, Pa. 17105
Rhode Island	E. R. Coon 802 Customhouse Bldg. Boston, Massachusetts 02109	T. J. Grennan, Jr., Chief Division Animal Industry & Dairy Industry 365 State Office Bldg. Providence, Rhode Island
South Carolina	C. E. Boyd, Director State-Federal Livestock Disease Eradication Program P. O. Box 1771 Columbia, South Carolina 29202	same
South Dakota	H. P. Honstead Medical Clinic Bldg. 772 E. Dakota Avenue Pierre, South Dakota 57501	M. D. Mitchell State Office Bldg. Pierre, South Dakota 57501
Tennessee	W. W. Bird P. O. Box 909 548 U. S. Courthouse Nashville, Tenn. 37202	C. E. Kord P. O. Box 9039 Melrose Station Nashville, Tennessee 37202

State	Federal Veterinarian in Charge	State Official
Texas	J. L. Wilbur, Jr. 3rd Floor Western Republic Life Bldg. Austin, Texas 78701	S. B. Walker Texas Animal Health Comm. 1020 Sam Houston St. Office Bldg. Austin, Texas 78701
Utah	J. E. Rasmussen P. O. Box 11429 5237 Federal Bldg. 125 S. State Street Salt Lake City, Utah	Hendrik Versluis Room 412 State Capitol Bldg. Salt Lake City, Utah
Vermont	C. O. Finch State Agricultural Bldg. Montpelier, Vermont 05602	A. E. Janawicz, Director Vermont Livestock Division Dept. of Agriculture Montpelier, Vermont 05602
Virginia	E. C. Roukema 203 North Governor St. Room 313 Richmond, Virginia 23219	W. L. Bendix 203 North Governor St. Richmond, Virginia 23219
Washington	F. M. Shigley Post Office Box 87 205 Union Avenue Bldg. Olympia, Washington 98501	D. A. McGill Supervision of Animal Industry Division Dept. of Agri. P. O. Box 128 Olympia, Washington 98501
West Virginia	L. G. Berg 3404 Federal Office Bldg. 500 Quarrier St. Charleston, W. Va. 25301	T. P. Siburt, Director Room E 102 Capitol Bldg. Charleston, W. Va. 25301
Wisconsin	A. A. Erdmann, Chief Veterinarian State-Federal Cooperative Program Hill Farms State Office Bldg. 4802 Sheboygan Ave. Room B 280 Madison, Wisconsin 53702	same
Wyoming	W. M. Reynolds P. O. Box 825 Room 8007, Post Off. & Court House 2120 Capitol Ave. Cheyenne, Wyoming 82001	R. I. Port State Office Bldg. Cheyenne, Wyoming 82001
Alaska	Harold D. White Rooms 60-61 Federal Building Anchorage, Alaska 99501	Fred S. Honsinger P. O. Box 2473 Juneau, Alaska
Puerto Rico	F. E. Henderson P. O. Box 10149 Martinez and Sand Bldg. R. H. Todd Avenue, Corner of Carmen Santurce, Puerto Rico 00908	Pedro A. Oliver Director Veterinary Services Dept. of Agriculture San Juan, Puerto Rico

ALABAMA

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	52,794	60,574	+14.7
Reactor Herds-Lots	3,740	5,200	+39.0
Percent	7.1	8.6	(+1.5)
Cattle Tested	392,253	445,922	+13.7
Reactor Cattle	9,207	13,368	+45.2
Percent	2.4	3.0	(+0.6)
Ring Tests			
Herd Tests	5,263	4,466	-15.1
Suspicious Herd Tests	149	104	-30.2
Percent	2.8	2.3	(-0.5)
Vaccinations (Calfhood)	106,291	115,770	+8.9
Certification of Counties			
Modified Certified			
New	11	10	
Total	44	54	
Certified Brucellosis-Free			
New	0	0	
Total	0	0	
Total Certified Counties	44	54	

( ) % Difference

The target date for attaining statewide Modified Certified Brucellosis Area status for Alabama remains December 31, 1965. Ten counties achieved this status during the calendar year 1964, leaving a total of 13 counties in the noncertified group. Area work has been initiated in seven of these counties. Limitation of funds and personnel must be overcome before a concerted effort is made in the remaining six counties toward modified certified status.

During the year the market cattle testing program was expanded so that now all stockyards are applying back tags on cattle going to other markets and slaughter establishments. Cattle returning to farms are blood tested. Cooperation in this phase of the program has been excellent. Under MCT, 2,011 reactors were detected during the calendar year. Herds of reactor cattle located in area counties were tested; however, if the herd of origin was located in a nonarea county, blood tests of the herd were usually not conducted. The priority was given to area counties and modified certified counties due to inadequate funds for testing all herds of origin of MCT reactors.

The favorable attitude of herd owners in Alabama has been encouraging, and with adequate funds and personnel the goals will be achieved, with Alabama becoming a modified certified State in 1965 and a Certified Brucellosis Free State by 1972. A survey for swine brucellosis was conducted during the year and the incidence of titers of 1:25 or higher among the swine sampled was 7.84 percent. The lack of information concerning the herd or origin for the swine sampled under this survey prevents drawing a conclusion as to the real incidence of swine brucellosis in Alabama.

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	79	52	-34.2
Reactor Herds-Lots	0	0	0.0
Percent	0.0	0.0	(0.0)
Cattle Tested	881	852	-3.3
Reactor Cattle	0	0	0.0
Percent	0.0	0.0	(0.0)
Ring Tests			
Herd Tests	39	50	+28.2
Suspicious Herd Tests	0	0	0.0
Percent	0.0	0.0	(0.0)
Vaccinations (Calfhood)	159	155	-2.5
Certification of Counties			
Modified Certified			
New	0	0	
Total	0	0	
Certified Brucellosis-Free			
New	0	0	
Total	0	0	
Total Certified Counties	0	0	

( ) % Difference

The brucellosis situation in Alaska remains essentially unchanged. During calendar year 1964, as in 1963, no bovine brucellosis reactors were detected. The ring test was conducted on approximately 85 percent of the herds marketing milk and no suspicious herds were detected. During 1964 the number of herds screened by the ring test increased by 28 percent from 39 herds to 50 herds.

Brucellosis does exist in the caribou herds maintained by the Eskimos and this problem continues to be the subject for a research project conducted under the guidance of the Artic Health Research Center and the State Fish and Game Department. The organism involved in this outbreak is similar in many respects to Brucella suis. Animal innoculations are presently in progress as a part of the research project on this organism.

The wildlife population is sampled each year to determine if a reservoir of Brucella infection may exist in other species.

ARIZONA

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	1,728	1,199	-30.6
Reactor Herds-Lots	52	41	-21.2
Percent	3.0	3.4	(+0.4)
Cattle Tested	33,416	33,317	-0.3
Reactor Cattle	92	1.09	+18.5
Percent	0.3	0.3	(0.0)
Ring Tests			
Herd Tests	872	861	-1.3
Suspicious Herd Tests	38	13	-65.8
Percent	4.4	1.5	(-2.9)
Vaccinations (Calfhood)	13,160	13,666	+3.8
Certification of Counties			
Modified Certified			
New	0	0	
Total	14	14	
Certified Brucellosis-Free			
New	0	0*	
Total	0	0	
Total Certified Counties	14	14	

( ) % Difference

*Five Indian reservations qualified as Certified Brucellosis-Free Areas.

The effect of increasing the frequency of milk ring tests in Arizona dairy herds to four times a year during 1963 is illustrated by the sharp reduction in the number of suspicious tests recorded in 1964. The percentage of suspicious herd tests is now 1.5. The reduction in suspicious herd ring tests, however, was not reflected in the number of reactors disclosed nor by the number of reactor herds, which increased by 0.4 percent while the percentage of reactor cattle remained constant.

During the year, four Indian reservations obtained Certified Brucellosis-Free status. Continued progress toward eradication of brucellosis is being made in other areas of the State but minor difficulties have been encountered. Increased effort must be made to overcome apprehension of the ranchers in the full utilization of the market cattle testing program. The hesitancy of the ranchers to make full use of this program is due to their fear of restrictions which might be placed on replacement cattle from noncertified areas. In addition, the ranchers are apprehensive that retained vaccination titers among animals that could not properly be identified as vaccinates would lead to unnecessary testing of their herds. The low incidence of brucellosis in Arizona should not present any serious difficulty for this State to obtain certified status provided the market cattle testing program is fully implemented.

One infected bison herd at Flagstaff is under close surveillance with periodic blood bests, as a part of the program to eliminate infection from this herd.

There are no state restrictions requiring calf vaccination of cattle sold intrastate or imported from other states. In fact, calf vaccination in Arizona has never been routinely practiced in the range area except in herds where infection might be found. The number vaccinated has remained stable from year to year but will be reduced with a market cattle testing program.

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	68,914	75,659	+9.8
Reactor Herds-Lots	2,178	1,801	-17.3
Percent	3.2	2.4	(-0.8)
Cattle Tested	242,020	243,084	+0.4
Reactor Cattle	4,633	3,477	-25.0
Percent	1.9	1.4	(-0.5)
Ring Tests			
Herd Tests	15,763	14,367	-8.9
Suspicious Herd Tests	140	197	+40.7
Percent	0.9	1.4	+0.5
Vaccinations (Calfhood)	135,933	137,577	+1.2
Certification of Counties			
Modified Certified			
New	0	0	
Total	75	75	
Certified Brucellosis-Free			
New	0	0	
Total	0	0	
Total Certified Counties	75	75	

( ) % Difference

The extensive market cattle testing program in Arkansas continues to be extremely effective. Fewer reactor herds and reactor cattle were detected during calendar year 1964 in spite of an increase in the number of tests conducted. Most of the tests are being conducted at gathering points rather than on farms. About 10 percent of the market cattle samples are covered by both the market cattle program and the ring test program. Under the unique system employed in Arkansas for conducting the market cattle testing programs, most of the animals are adequately identified at the time of testing; this permits a high level of successful tracebacks. At least 95 percent of market cattle tests can be traced to a herd of origin. Seventy-five percent of the herds of origin of market cattle reactors are promptly tested and the remaining herds are tested as the cattle become available or the owners' facilities are improved to handle the herd. In other cases, the personnel workload does not permit immediate scheduling of the herd or the owner may have to be visited more than once before consenting to the test.

The assignment of a brucellosis epidemiologist to work with the brucellosis problem herds was one of the most significant changes in the program during the year. The establishment of this phase of the eradication program should materially aid the complete eradication of brucellosis on schedule. An effort to control cattle movements from neighboring States that have a higher incidence of brucellosis needs to be implemented to maintain the progress which has already been made toward brucellosis-free status.

CALIFORNIA

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	21,131	24,384	+15.4
Reactor Herds-Lots	937	841	-10.2
Percent	4.4	3.4	(-1.0)
Cattle Tested	273,085	326,125	+19.4
Reactor Cattle	1,930	1,669	-13.5
Percent	0.7	0.5	(-0.2)
Ring Tests			
Herd Tests	14,818	23,246	+56.9
Suspicious Herd Tests	727	731	0.6
Percent	4.9	3.1	(-1.8)
Vaccinations (Calfhood)	432,499	421,946	-2.4
Certification of Counties			
Modified Certified			
New	0	0	
Total	56	56	
Certified Brucellosis-Free			
New	2	6	
Total	2	8	
Total Certified Counties	58	58	

( ) % Difference

During 1964, California added six new counties to the Certified Brucellosis-Free group. The anticipated date for achieving statewide brucellosis-free status remains December 31, 1965.

Both the number of reactor herds and cattle and the number of suspicious herds detected on the brucellosis ring test declined during 1964. Further reductions are anticipated during the coming year as work progresses toward brucellosis-free status.

California has emphasized the swine validation program and is one of the nation's leaders in this phase of the brucellosis program. Thirty-four counties enjoy Validated Brucellosis-Free Herd status and the remaining 24 counties have been designated as swine brucellosis control areas. There are 456 validated swine herds in California.

Under the market cattle testing program approximately 50 percent of the animals showing a titer of 1:100 or higher are reclassified as suspicious on the basis of a review of the herd history. This is undoubtedly due to the large number of vaccinates among the cattle population in California. All herds of origin from which MCT reactors originate are blood tested unless the status of the animal has been changed after an investigation of the herd.

California continues to require calf vaccination on female cattle sold intrastate or imported. Action to rescind these requirements in the near future is contemplated. The vaccination requirements were modified during 1964 to reflect the current recommendations of the U.S. Livestock Sanitary Association.

Surveys to determine the incidence of swine brucellosis have been conducted. The latest reveal that 16 percent of the swine sampled had a titer of 1:25 or higher. The problem of low titers among swine may be a complicating factor in the certification of the remaining counties as brucellosis-free. In southern California several counties have a problem--one or two swine herds have a large percentage of animals with low titers but only one or two animals in the reactor range.

The assignment of a brucellosis epidemiologist has greatly assisted the State in the eradication program. A number of large dairy herds have been freed of the infection after epidemiological investigation and the removal of carrier animals. The procedures applied by the epidemiologist have provided encouragement toward achieving complete eradication of this disease during 1965.

778-198 O-65—4

COLORADO

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	8,785	11,410	+29.9
Reactor Herds-Lots	487	459	-5.7
Percent	5.5	4.0	(-1.5)
Cattle Tested	144,489	175,618	+21.5
Reactor Cattle	1,223	1,168	-4.5
Percent	0.8	0.7	(-0.1)
Ring Tests			
Herd Tests	10,912	10,566	-3.2
Suspicious Herd Tests	236	105	-55.5
Percent	2.2	1.0	(-1.2)
Vaccinations (Calfhood)	119,564	166,002	+38.8
Certification of Counties			
Modified Certified			
New	0	4	
Total	40	44	
Certified Brucellosis-Free			
New	0	0	
Total	0	0	
Total Certified Counties	40	44	

( ) % Difference

The target date for achieving Modified Certified Brucellosis Area status for Colorado is December 31, 1965. During calendar year 1964, four counties attained this status, and it is anticipated that the 19 remaining counties will qualify in 1965. At the present time, 11 counties have been designated as area work counties.

The infection rates during 1964 showed a reduction from 5.5 percent to 4 percent of the herds, while the percent of reactor cattle dropped from 0.8 to 0.7 percent, but the most significant decrease was in the number of suspicious milk ring tests.

Calf vaccination has continued to increase during the year. The marked increase in this phase of the problem reflects the expansion and intensification of the entire eradication effort.

Undoubtedly, the market cattle testing program will be a significant factor in continued progress of this program, with the majority of the modified certified areas being recertified by this means. The number of animals tested under the MCT program will increase as greater emphasis is placed on this screening procedure.

CONNECTICUT

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	11,731	10,141	-13.6
Reactor Herds-Lots	46	23	-50.0
Percent	0.4	0.2	(-0.2)
Cattle Tested	65,843	48,854	-25.8
Reactor Cattle	66	30	-54.5
Percent	0.1	0.1	(0.0)
Ring Tests			
Herd Tests	7,605	6,457	-15.0
Suspicious Herd Tests	39	35	-10.0
Percent	0.5	0.5	(0.0)
Vaccinations (Calfhood)	17,528	16,815	-4.0
Certification of Counties			
Modified Certified			
New	0	0	
Total	3	2	
Certified Brucellosis-Free			
New	1	1	
Total	5	6	
Total Certified Counties	8	8	

( ) % Difference

The brucellosis eradication program in Connecticut has proceeded with minimum difficulty. The last two remaining counties were approved during January 1965 for Certified Brucellosis-Free status. This makes Connecticut the fifth State to qualify as a Certified Brucellosis-Free Area. The completion of the last two counties preceded the expected target date of June 30, 1965 by six months.

The surveillance programs will be continued in Connecticut to assure that brucellosis is not reintroduced into the State. At the present time, the ring test is being conducted four times a year. The market cattle testing program, based on ear tag identification rather than back tagging, has been successful in promptly identifying suspicious herds. About 80 percent of the animals tested under the market cattle testing program are dairy type. Less than one percent of the cattle showing a titer of 1:100 or higher have been classified as suspects following a review of the herd history. The State requires dealer identification of all animals traded or sold and also requires calf vaccination of all cattle sold intrastate or imported from other States. No change in the State requirements regarding calf vaccination is anticipated before fiscal year 1967.

An area veterinarian has been trained as a brucellosis specialist so that any outbreaks of brucellosis can be epidemiologically studied and the disease promptly eradicated.

DELAWARE

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	1,433	1,364	-4.8
Reactor Herds-Lots	26	12	-53.8
Percent	1.8	0.9	(-0.9)
Cattle Tested	27,892	25,994	-6.8
Reactor Cattle	29	43	+48.3
Percent	0.1	0.2	(+0.1)
Ring Tests			
Herd Tests	1,743	1,360	-22.0
Suspicious Herd Tests	11	5	-54.5
Percent	0.6	0.4	(-0.2)
Vaccinations (Calfhood)	3,930	3,616	-8.0
Certification of Counties			
Modified Certified			
New	0	0	
Total	3	3	
Certified Brucellosis-Free			
New	0	0	
Total	0	0	
Total Certified Counties	3	3	

( ) % Difference

There are definite plans for the establishment of a market cattle testing program in the two salesyards located within the state of Delaware. The standard back tag will be applied on all cattle received at these yards. During the past year nearly all of the reactor cattle disclosed have been traced to out of state herds of origin. The number of reactors detected during 1964 was greater than that detected in 1963. The improved identification methods that will be initiated in the two salesyards should aid in the proper identification of the source of the infection.

Under the existing market cattle testing program it is estimated that 70 percent of the animals tested are of the dairy type and are also covered under the right test program. Delaware is currently conducting three right tests per year; this program covers approximately 97 percent of the herds selling dairy products. The estimated target date for achieving brucellosis-free status is January 1, 1968.

FLORIDA

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	13,121	16,354	+24.6
Reactor Herds-Lots	1,683	1,770	+5.2
Percent	12.8	10.8	(-2.0)
Cattle Tested	255,693	252,071	-1.4
Reactor Cattle	4,435	4,063	-8.4
Percent	1.7	1.6	(-0.1)
Ring Tests			
Herd Tests	5,374	3,935	-26.8
Suspicious Herd Tests	786	627	-20.2
Percent	14.6	15.9	(+1.3)
Vaccinations (Calfhood)	147,667	142,304	-3.6
Certification of Counties			
Modified Certified			
New and Reinstated	1	0	
Removed	0	0	
Total	30	30	
Certified Brucellosis-Free			
New	0	0	
Total	0	0	
Total Certified Counties	30	30	

( ) % Difference

The brucellosis eradication program in Florida remains essentially unchanged. However, there are some encouraging signs in that two counties have indicated an interest in starting work toward achieving a Modified Certified Brucellosis Area status. The area work is expected to begin in these counties in the very near future. The market cattle testing data have been accumulated for the three-year period and will be fully evaluated. A preliminary review of this information indicates that while infection in many herds has been detected, the incidence of the disease has remained stable and few beef owners have taken adequate steps to eradicate brucellosis from their herds.

During 1964, back tags were issued to interested ranchers through county agent's offices to implement the back tagging program at the salesyards. The results of this on-the-farm tagging has been extremely slow; few ranchers apply tags on the cattle before they reach the market.

The vaccination program was modified during the year. As of April 15, vaccination of male bovine calves was discontinued. The age for official vaccinates has been amended so that calves of beef type can now be vaccinated between the age of 4 and 8 months and calves of dairy type between 6 and 8 months.

Further modification of the existing brucellosis program in Florida was undertaken during the year. All owners with adult vaccinates were notified that these animals must be eliminated by August 1964.

The percentage of suspicious ring tests remains high and, in fact, increased in 1964 over 1963 (with fewer herds included under this screening procedure). Little progress in extending the brucellosis eradication program in Florida can be expected until the attitude of the ranchers is changed through education programs.

GEORGIA

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	113,606	69,607	-38.7
Reactor Herds-Lots	1,350	1,036	-23.3
Percent	1.2	1.5	(+0.3)
Cattle Tested	268,249	249,112	-7.1
Reactor Cattle	3,064	2,512	-18.0
Percent	1.1	1.0	(-0.1)
Ring Tests			
Herd Tests	8,642	7,809	-9.6
Suspicious Herd Tests	239	129	-46.0
Percent	2.8	1.7	(-1.1)
Vaccinations (Calfhood)	83,040	52,204	-37.1
Certification of Counties			
Modified Certified			
New	0	0	
Total	159	159	
Certified Brucellosis-Free			
New	0	0	
Total	0	0	
Total Certified Counties	159	159	

( ) % Difference

Georgia has an active MCT program--all the tags are applied at livestock markets. Most of the animals tested under this program are bled at the time of slaughter. Under the MCT program both dairy type and beef type animals are identified with backtags. About 30 percent of the animals identified are of dairy type. However, it is estimated that only two-thirds of the dairy animals originate from herds covered by the ring test; therefore, 20 percent of the animals tested under the MCT program received double coverage. Dairy herds having a history of calf vaccination and negative brucellosis ring tests (BRT) are not required to be tested if only one MCT reactor with a titer of 1:100 is disclosed. The State does not have any specific requirements for determining identification of the animal traded or sold but has considered action along these lines.

A brucellosis epidemiologist has been assigned to work on problem herds in Georgia. As this phase of the program is developed greater attention will be placed on detecting carrier animals as a source of infection in persistently infected herds. This phase of the program will contribute to the reduction of brucellosis and effectively accelerate the elimination of this disease.

HAWAII

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	1,999	2,442	+22.2
Reactor Herds-Lots	78	72	-7.7
Percent	3.9	2.9	(-1.0)
Cattle Tested	33,864	32,052	-5.4
Reactor Cattle	113	175	+54.9
Percent	0.3	0.5	(+0.2)
Ring Tests			
Herd Tests	180	172	-4.4
Suspicious Herd Tests	3	0	-0.0
Percent	1.7	0.0	(-1.7)
Vaccinations (Calfhood)	9,874	11,290	+14.3
Certification of Counties			
Modified Certified			
New	0	2	
Total	0*	2	
Certified Brucellosis-Free			
New	0	0	
Total	0	0	
Total Certified Counties	0	2	

( ) % Difference

*No counties certified. Molokai Island, a small part of Maui County, is certified.

The interest in a validation program in Hawaii is high. A survey of slaughtered swine was conducted but the results were inconclusive and the incidence of brucellosis may best be determined from the records on validation testing. The results of the survey indicated that 23 percent of the swine tested reacted at a dilution of 1:25 or higher. One of the four counties in Hawaii is validated and 202 herds are maintained as Validated Brucellosis-Free.

During 1964 two counties were declared modified certified areas. The achievement of this status for the entire State has been delayed because of a high incidence of infection in one area and the inaccessbility of many herds except at one time during the year. For this reason it has been necessary for Hawaii to revise the target date for statewide certification to July 31, 1966.

The market cattle testing program has been utilized extensively and both State and Federal slaughter establishments have cooperated. Approximately 20 percent of the culled cows are from dairy herds which are covered by BRT. The incidence of infection in most areas of the State is extremely low. During calendar year 1964 there were no suspicious ring rests recorded.

Many of the animals, approximately 50 percent, showing reactions of 1:100 or higher on the slaughter test are reclassified as suspects after an investigation at the herd of origin. These are reclassified because of calf vaccination status. There are no plans to change the present vaccination regulations. Since vaccination is required only in infected herds and only females are vaccinated, emphasis is being placed on urging the ranchers to vaccinate at lower ages. All herds of origin of MCT reactors are tested except when the animals have been reclassified on the basis of vaccination status in a few Plan B herds or when the veterinarian conducting the investigation believes that the herd history is not indicative of brucella infection.

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	55,959	67,131	+20.0
Reactor Herds-Lots	233	272	+16.7
Percent	0.4	0.4	(0.0)
Cattle Tested	83,146	102,917	+23.8
Reactor Cattle	364	453	+24.5
Percent	0.4	0.4	(0.0)
Ring Tests			
Herd Tests	34,131	35,730	+4.7
Suspicious Herd Tests	251	319	+27.1
Percent	0.7	0.9	(+0.2)
Vaccinations (Calfhood)	163,307	171,598	+5.1
Certification of Counties			
Modified Certified			
New	0	0	
Total	41	33	
Certified Brucellosis-Free			
New	3	8	
Total	3	11	
Total Certified Counties	44	44	

( ) % Difference

Idaho is continuing to move toward Certified Brucellosis-Free Area status at the anticipated rate. In calendar year 1964, eight additional counties were certified brucellosis-free. The sequence of certification is similar to that originally used when the State attained modified certified status in 1960. The current target date for Certified Brucellosis-Free Area status is December 1968.

The brucellisis problem herd program was accelerated by the assignment of a brucellosis epidemiologist during 1964. Full utilization of the techniques available under the problem herd program has been initiated to assure the maintenance of the free areas and to assist the elimination of infection from the remaining counties. The incidence of brucellosis is very low in Idaho and little difficulty is foreseen in completing the statewide certification within the predicted period. The screening programs are well developed and are effectively utilized in this State. Increased attention is being directed toward the MCT blood samples that disclosed low titers for possible leads to previously unknown infected herds. Idaho is fortunate in that the surrounding States also have a very low incidence of brucellosis and effective screening procedures to detect any infected herds promptly. Approximately 17 percent of the samples collected under the MCT program are from dairy types which originate from herds presently screened under the ring test. Due to the high level of vaccination which has been practiced in the past, approximately 17 percent of the MCT reactors at a dilution of 1:100 or higher have been reclassified as suspects after an investigation at the herd of origin. No serious problems have been encountered in tracing the reactors to the herd of origin.

The incidence of swine brucellosis appears to be extremely low. A recent survey of swine sampled at slaughter disclosed an incidence of titers at 1:25 or higher of less than 2 percent. The results of this survey are not meaningful until the status of the herd of origin is known.

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	31,564	26,295	-16.7
Reactor Herds-Lots	1,344	1,063	-20.9
Percent	4.3	4.0	(-0.3)
Cattle Tested	317,385	241,903	-23.8
Reactor Cattle	3,030	2,893	-4.5
Percent	1.0	1.2	(+0.2)
Ring Tests			
Herd Tests	48,295	47,480	-1.7
Suspicious Herd Tests	188	371	+97.3
Percent	0.4	0.8	(+0.4)
Vaccinations (Calfhood)	133,786	126,252	-5.6
Certification of Counties			
Modified Certified			
New	9	0	
Total	98	98	
Certified Brucellosis-Free			
New	0	0	
Total	0	0	
Total Certified Counties	98	98	

( ) % Difference

During 1964, the frequency of the ring test in Illinois was increased from two to three times per year while the total number of herd tests remained about the same, but the number of suspicious ring tests increased nearly 100 percent compared with 1963. A survey using the standard and a modified BRT was conducted on Babcock samples collected from 7 creameries. The modified BRT using raw negative cream detected four reactor herds that would not have been found with the standard ring test.

The MCT program was initiated at 62 concentration points such as stockyards, salesbarns, and packing plants. All cows received at these facilities were back tagged. The development of this phase of the brucellosis eradication program has necessitated a reorganization of the records and reports so that the information from the market testing program will be readily available. The results on blood samples from back tagged cattle--a recovery rate of approximately 70 percent--have been extremely encouraging.

The brucellosis problem herd program has been established with the assignment of a full-time epidemiologist. New laboratory facilities for problem herd work have been provided at the University of Illinois College of Veterinary Medicine. All of the standard supplemental tests are now available as tools to detect infected cattle in selected problem herds.

A survey on swine was conducted at a Chicago packing plant. Animals received at this plant were screened to eliminate all boars originating from out-of-State points. The results of this survey on 1,100 boars of Illinois origin disclosed 31.9 percent with reactions of complete at 1:25 or higher. Tracing to herd of origin for the purpose of determining the significance of these reactions was not a primary purpose of this survey.

INDIANA

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	39,138	40,632	+3.8
Reactor Herds-Lots	526	508	-3.4
Percent	1.3	1.3	(0.0)
Cattle Tested	211,166	259,871	+23.1
Reactor Cattle	1,120	947	-15.4
Percent	0.5	0.4	(-0.1)
Ring Tests			
Herd Tests	47,760	41,448	-13.2
Suspicious Herd Tests	338	298	-11.8
Percent	0.7	0.7	(0.0)
Vaccinations (Calfhood)	78,187	76,403	-2.3
Certification of Counties			
Modified Certified			
New and Reinstated	0	0	
Removed	0	-1	
Total	92	91	
Certified Brucellosis-Free			
New	0	0	
Total	0	0	
Total Certified Counties	92	91	

( ) % Difference

Unfortunately, Indiana lost its modified certified status once again in 1964. Testing to meet the requirements for certification is being continued in Warren County. Once again this illustrates the inadequacy of the 20-percent-of-the-cattle-in-20-percent-of-the-herd requirement which terminated July 1, 1964. Greater emphasis must be placed upon screening methods to provide adequate surveillance for the prompt detection of infected herds.

Indiana has augmented its MCT program and is now backtagging all eligible animals at the Evansville stockyards. A reciprocable arrangement between Indiana and Kentucky for back tagging each other's cattle was begun in July. Further expansion of the MCT back tagging program is contemplated at the livestock markets throughout other areas of the State. Increased frequency of the BRT has been agreed upon, and it is anticipated that three rounds a year will begin on January 1, 1965. This represents a slight delay in achieving the target date reported last year.

In spite of the fact that Warren County disqualified the State for modified certified status, plans have progressed in other areas of the State to complete the testing necessary to qualify two counties for brucellosis-free status soon after Indiana is again a modified certified State.

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	65,543	83,529	+27.4
Reactor Herds-Lots	2,334	4,399	+88.5
Percent	3.6	5.3	(+1.7)
Cattle Tested	575,616	911,435	+58.3
Reactor Cattle	5,226	9,837	+88.2
Percent	0.9	1.1	(+0.2)
Ring Tests			
Herd Tests	90,155	111,256	+23.4
Suspicious Herd Tests	1,205	1,460	+21.2
Percent	1.3	1.3	(0.0)
Vaccinations (Calfhood)	290,663	413,151	+42.1
Certification of Counties			
Modified Certified			
New	2	18	
Total	27	45	
Certified Brucellosis-Free			
New	0	0	
Total	0	0	
Total Certified Counties	27	45	

( ) % Difference

Eighteen counties in Iowa were granted Modified Certified Brucellosis Area status during 1964. The brucellosis program goals remain unchanged and Iowa anticipates becoming a modified certified State by July 1, 1965. Little change has occurred in either the frequency of milk ring tests or the percent of suspicious herds detected. However, the total of tests conducted during 1964 reflected a 23.4-percent rise over 1963. It is estimated that the BRT program now provides coverage for 99 percent of the dairy herds in the State.

The MCT program has not been an important part of the Iowa program. While a few animals have been tested as a result of a Market Cattle testing program, a number insufficient to develop accurate statistics have been screened under this method.

A marked decrease in the number of cases of undulant fever was noted in 1964 compared with 1963. Iowa still leads the nation in the number of reported cases of human brucellosis; however, it did experience a drop from 155 cases reported in 1963 to 114 cases reported through November 1964. Even with the significant decrease in the number of cases reported from Iowa the national incidence remains essentially unchanged. Swine brucellosis in Iowa may not be as prevalent as previously thought; however, Iowa is one of the more heavily infected swine areas in the nation.

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	15,081	61,138	+305.4
Reactor Herds-Lots	1,484	1,641	+10.6
Percent	9.8	2.7	(-7.1)
Cattle Tested	195,169	259,922	+33.2
Reactor Cattle	3,737	3,622	-3.0
Percent	1.9	1.4	(-0.5)
Ring Tests			
Herd Tests	35,080	47,434	+35.2
Suspicious Herd Tests	599	596	-0.5
Percent	1.7	1.3	(-0.4)
Vaccinations (Calfhood)	335,144	334,343	-0.2
Certification of Counties			
Modified Certified			
New	26	0	
Total	105	105	
Certified Brucellosis-Free			
New	0	0	
Total	0	0	
Total Certified Counties	105	105	

( ) % Difference

Kansas has continued its emphasis on the expansion of the market cattle testing program. There are now 88 auction markets participating in this program. Although the records do not distinguish between cattle of dairy type covered by the ring test and cattle of beef type, it is felt that very little duplication is encountered. Herds of origin of market cattle test reactors are tested as soon as practicable. However, in some cases the herd test may be delayed pending continued participation in the market cattle testing program or a partial herd test accomplished to satisfy the requirements of Graph C-4A. There are no requirements at the present time concerning mandatory dealer identification for animals traded or sold. Reclassification of market cattle reactors can be made after an investigation by the field veterinarian if the animal was a vaccinate.

It is estimated that 95 percent of the herds marketing milk or cream are included in the BRT program. While all reactions are recorded as suspicious, only those herds with a reaction of three or four plus on the milk sample are required to present the cattle for immediate test. The remaining herd owners are notified of the suspicious reaction and are advised that a blood test of the herd may be conducted at public expense, if they so desire. During 1964, a field veterinarian received additional training in epidemiology. The establishment of the brucellosis problem herd program is being initiated and will be expanded as problem herds are identified.

Although the swine industry in Kansas is not as large as in many States, there is a growing interest in swine brucellosis eradication. Currently, 20 herds are Validated Brucellosis-Free. There are no formidable problems foreseen which would delay eradication of brucellosis from the livestock population.

KENTUCKY

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	59,283	50,792	-14.3
Reactor Herds-Lots	2,235	1,786	-20.0
Percent	3.8	3.5	(-0.3)
Cattle Tested	307,157	223,007	-27.4
Reactor Cattle	4,959	4,094	-17.4
Percent	1.6	1.8	(+0.2)
Ring Tests			
Herd Tests	67,668	78,853	+16.5
Suspicious Herd Tests	1,293	1,718	+32.9
Percent	1.9	2.2	(+0.3)
Vaccinations (Calfhood)	147,462	118,857	-19.4
Certification of Counties			
Modified Certified			
New	17	0	
Total	120	120	
Certified Brucellosis-Free			
New	0	0	
Total	0	0	
Total Certified Counties	120	120	

( ) % Difference

The MCT back tagging program in Kentucky officially began on January 2, 1964 at 15 stockyards. The program rapidly accelerated and at the end of the second month practically all of the stockyards in the State were cooperating in this program. In the early stages of the MCT program one of the major problems encountered was the difficulty in obtaining the herd of origin at the time the back tags were applied. A number of the animals blood tested could be traced only to cattle dealers instead of the original herd of origin. This situation was minimized following notification through the office of the State veterinarian that fee payment would not be approved for samples drawn at markets from improperly identified cattle.

The problem herd program was initiated and has progressed steadily and is now considered to be on solid footing. Twenty-two problem herds have been enrolled in this program which is close to the maximum number which can be handled at any one time to assure adequate service for those enrolled. The BRT problem herds have been clearing up faster than usual as indicated in the limited data available to date at this station.

The brucellosis ring test program has shown little change in the percentage of suspicious herds. A slight increase in the percentage of suspicious ring tests is noted but may reflect the increased frequency in the testing schedule.

There has been a slight increase in the percentage of reactor cattle disclosed on the blood test during 1964, which may be attributed to several factors, including the increased screening coverage of all herds through the market cattle testing program. A greater percentage of testing is now done in known infected herds and the tube test has been adopted as standard testing procedure. The anticipated progress of several counties toward brucellosis-free status has been hampered because pockets of infection have been found where least expected. Swine in association with known infected cattle herds have been tested in many instances. Blood tests of all susceptible species in association with infected animals will be encouraged. The validation of individual swineherds is also being encouraged and long range plans for a validated State program are being formulated.

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	67,875	58,900	-13.2
Reactor Herds-Lots	6,490	5,087	-21.6
Percent	9.6	8.6	(-1.0)
Cattle Tested	379,625	342,561	-9.8
Reactor Cattle	13,188	11,235	-14.8
Percent	3.5	3.3	(-0.2)
Ring Tests			
Herd Tests	5,970	5,274	-11.7
Suspicious Herd Tests	316	189	-40.2
Percent	5.3	3.6	(-1.7)
Vaccinations (Calfhood)	112,630	110,374	-2.0
Certification of Counties			
Modified Certified			
New	4	0	
Total	12	12	
Certified Brucellosis-Free			
New	0	0	
Total	0	0	
Total Certified Counties	12	12	

( ) % Difference

The target date of June 30, 1965 was revised to July 1, 1966 for Louisiana to attain Modified Certified Brucellosis Area status. Interest in brucellosis eradication is steadily increasing in many areas of the State and the new goal can be met if a concerted effect is made. Several changes in the present law and regulations have been suggested to implement the rapid control and eradication of this disease. The elimination of the requirement to petition the State for enrollment in area work and the addition of a requirement for all owners of infected herds to submit their cattle for prompt retesting would solve many of the problems currently encountered.

A change in the program that would require all cattle 3 years or older sold at auction (except commercial dairy cattle sold for immediate slaughter) to be blood tested was approved by the Livestock Sanitary Board.

Market cattle testing is accomplished at auction markets where practically all of the vaccinates can be identified and tested accordingly. Suspects disclosed by blood tests at the auction are branded and sold immediately for slaughter. Under the present program many MCT reactors successfully traced to the herd of origin were not tested promptly because the herd of origin was located outside of modified certified areas and parishes under area test. The Livestock Sanitary Board has a proposal under consideration to strengthen the quarantine regulation.

MAINE

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	19,356	14,533	-24.9
Reactor Herds-Lots	70	36	-48.6
Percent	0.4	0.2	(-0.2)
Cattle Tested	56,792	46,048	-18.9
Reactor Cattle	74	42	-43.2
Percent	0.1	0.1	(0.0)
Ring Tests			
Herd Tests	7,023	6,159	-12.3
Suspicious Herd Tests	20	26	+30.0
Percent	0.3	0.4	(+0.1)
Vaccinations (Calfhood)	17,400	15,800	-9.2
Certification of Counties			
Modified Certified			
New	0	0	
Total	0	0	
Certified Brucellosis-Free			
New	1	0	
Total	16	16	
Total Certified Counties	16	16	

( ) % Difference

The cautious approach to Certified Brucellosis-Free status in Maine successfully eliminated the residual foci of infection. Although Maine continues to detect an occasional animal on the Market Cattle Testing program in the reactor range, the tracing to herd of origin has not disclosed any further infection. In addition, these herds have a history of negative ring tests and do not represent a reservoir of infection. The occurrence of the occasional MCT reactor, however, may jeopardize the status of the counties even though no infection is present. All suspicious test reactions are investigated promptly by the brucellosis epidemiologist assigned to this area.

The MCT program is gaining in efficiency with the accumulation of testing data. All dealers licensed to handle livestock in Maine must maintain identification and provide this information under the MCT program. The most recent survey indicates that with the combined MCT and BRT program the necessity for area blood testing was eliminated for 60 percent of the herds and 81 percent of the cattle.

A screening program conducted under the cooperation of State slaughtering establishments has revealed 15 infected swine herds, 9 of which were garbage fed. Owner cooperation under the swine program has not been too encouraging. The epidemiologist is devoting much of his time to a review of swine brucellosis as the validation program is beginning to gain momentum. Plans for accelerating the validated phase of our brucellosis eradication program have been discussed and a concerted effort will be made on this project.

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	40,680	52,546	+29.2
Reactor Herds-Lots	178	187	+5.1
Percent	0.4	0.4	(0.0)
Cattle Tested	282,257	275,928	-2.2
Reactor Cattle	228	277	+21.5
Percent	0.1	0.1	(0.0)
Ring Tests			
Herd Tests	17,518	14,795	-15.5
Suspicious Herd Tests	309	264	-14.6
Percent	1.8	1.8	(0.0)
Vaccinations (Calfhood)	43,917	34,666	-21.1
Certification of Counties			
Modified Certified			
New	0	0	
Total	17	15	
Certified Brucellosis-Free			
New	5	2	
Total	6	8	
Total Certified Counties	23	23	

( ) % Difference

Maryland anticipates certifying the remaining 15 counties as brucellosis-free areas by June 30, 1966. In the past year two counties achieved this status. The continued progress toward the brucellosis-free status will rely heavily on the ring test, the MCT program, and the milk ordinance and herd test to comply with milk ordinance requirements.

The brucellosis ring test is conducted four times a year as in the past. All of the herds marketing milk or cream are covered; however, only 1/10 of one percent of the herds market cream.

The majority of MCT samples collected and tested represent animals of dairy type which have previously been covered in the herd of origin under the brucellosis ring test. It is estimated that 80 percent of the market cattle testing samples are collected from animals of this type. A high percentage of the market cattle tested animals showing a titer of 1:100 are reclassified as suspects because of vaccination status. Maryland laws require dealer identification of animals traded or sold, thus providing accurate information of the herd of origin.

The brucellosis problem herd program is steadily expanding to include herds showing suspicious reactions in the problem herd classification. An intensive investigation of suspects is imperative in free or nearly free areas to promptly detect any infected herds before a new focus of infection is established. The problem herd program has successfully eliminated the infection from several herds that have demonstrated a persistent infection in the past. One of the problems in Maryland has been differentiating between vaccinal titers and infection titers among the suspects. Stronger control of brucellosis vaccination has been effective by a regulation, promulgated in 1963, reducing the upper age of vaccination of dairy animals from eight months to six months. It is hoped that some of the previous problems associated with vaccination will be minimized or eliminated.

MASSACHUSETTS

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	9,625	10,818	+12.4
Reactor Herds-Lots	106	58	-45.3
Percent	1.1	0.5	(-0.6)
Cattle Tested	49,516	45,947	-7.2
Reactor Cattle	166	88	-47.0
Percent	0.3	0.2	(-0.1)
Ring Tests			
Herd Tests	8,709	8,269	-5.1
Suspicious Herd Tests	71	73	+2.8
Percent	0.8	0.9	(+0.1)
Vaccinations (Calfhood)	13,989	14,498	+3.6
Certification of Counties			
Modified Certified			
New	0	0	
Total	10	10	
Certified Brucellosis-Free			
New	1	0	
Total	4	4	
Total Certified Counties	14	14	

( ) % Difference

The target date for statewide Certified Brucellosis-Free status for Massachusetts has been established for June 30, 1966. The only obstacle that can be foreseen that may influence the attainment of this goal is the large turnover in out-of-state replacement cattle in the commercial dairy herds. This is not considered to be a major obstacle in view of the progress being made in the surrounding States and Canada and no major delay in obtaining Certified Brucellosis-Free Area status is contemplated. A complete area test has been initiated in the ten counties which have yet to qualify for brucellosis-free status. Blood testing of species other than cattle was also initiated and has met with a good response. The number of problem herds has steadily declined with the elimination of infection accomplished through the continued use of supplemental tests.

Massachusetts has been engaged in a problem herd program for several years but during 1964 Massachusetts supported this program by training one of its own field veterinarians in the techniques and procedures utilized for complete epidemiologic investigations.

The brucellosis ring test forms the basis of surveillance under the brucellosis program and have been found to be very effective. The market cattle testing program is also utilized but primarily supplements the BRT since 90 percent of the samples drawn at concentration point are from dairy cows previously covered by the ring test. It is necessary to reclassify about 50 percent of the animals disclosing a titer of 1:100 or higher due to vaccination status. No complications have been encountered in successfully tracing the herd of origin of MCT reactors because the State requires identification of animals traded and sold. One of the reasons for the large number of animals reclassified on the basis of market cattle test investigations is the requirement that all cattle imported or sold must be calf vaccinated. No action is planned to rescind these requirements at the present time.

A recent swine survey disclosed that 23 percent of the swine sampled had titers at 1:25 or higher. A comprehensive swine brucellosis program has not been established since many of the swine herds in Massachusetts are commercial herds that are fed garbage.

MICHIGAN

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	27,709	23,613	-14.8
Reactor Herds-Lots	996	577	-42.1
Percent	3.6	2.4	(-1.2)
Cattle Tested	231,458	201,446	-13.0
Reactor Cattle	1,883	1,036	-45.0
Percent	0.8	0.5	(-0.3)
Ring Tests			
Herd Tests	68,610	91,766	+33.8
Suspicious Herd Tests	1,474	1,435	-2.6
Percent	2.1	1.6	(-0.5)
Vaccinations (Calfhood)	136,628	136,980	+0.3
Certification of Counties			
Modified Certified			
New	0	0	
Total	57	53	
Certified Brucellosis-Free			
New	8	4	
Total	26	30	
Total Certified Counties	83	83	

( ) % Difference

The number of herds with single reactors disclosed in areas actively working toward brucellosis-free status made it necessary for Michigan to revise its target date for statewide brucellosis-free certification from December 1964 to June 1966. Investigations are currently in progress to determine the source of infection for the newly infected herds disclosing one reactor.

Although the MCT program has been in operation for only two months on a volume basis in Michigan, early figures indicate that 91.8 percent of the native cattle back tagged were of the dairy type. No problems have been encountered in blood testing herds of origin that are detected through the market cattle testing program. All dealers in Michigan are required to keep records on all livestock transactions. This law has been in effect for many years and the records are carefully checked by livestock inspectors for compliance.

The problem herd program in Michigan has substantially reduced the number of herds with a persistent infection. The total number of herds under this program has been reduced from approximately 75 in 1963 to 13 as of December 31, 1964. Prompt attention to newly infected herds with large beef cattle populations is necessary since these herds frequently develop into brucellosis problem herds (BPH) following infection due to poor management or an indifferent attitude on the part of the owner. This aspect of the problem herd program permits prompt elimination of the infection before the disease becomes persistently established in the herd. With the cooperation of the owners, the herds promptly clear up. During 1964, the marked reduction in the number of reactor cattle and the drop in BRT suspicious herds has been extremely encouraging.

Several surveys of swine brucellosis have been conducted in the last 10 years to determine the disease in Michigan. The incidence of reactions, especially in boars imported for slaughter, has been high. During the last two years, Michigan tested 3,589 swine and while none of them were classified as reactors the incidence of titers at 1:25 to 1:100 was 11.8 percent in the most recent survey.

MINNESOTA

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	46,007	34,625	-24.7
Reactor Herds-Lots	1,288	1,082	-16.0
Percent	2.8	3.1	(+0.3)
Cattle Tested	867,367	562,887	-35.1
Reactor Cattle	2,746	2,796	+1.8
Percent	0.3	0.5	(+0.2)
Ring Tests			
Herd Tests	207,406	226,862	+9.4
Suspicious Herd Tests	630	670	+6.3
Percent	0.3	0.3	(0.0)
Vaccinations (Calfhood)	198,218	199,145	+0.5
Certification of Counties			
Modified Certified			
New	0	0	
Total	62	54	
Certified Brucellosis-Free			
New	7	8	
Total	25	33	
Total Certified Counties	87	87	

( ) % Difference

The level of infection was greater than anticipated in Minnesota with the result that a greater number of reactors were disclosed. In spite of the higher level of infection, some of which occurred in established brucellosis-free areas, 33 of the 87 counties have now attained the designation of Certified Brucellosis-Free Areas. The increased herd infection rate required a temporary reorganization for assigning and supervising the testing program in these areas. Blood tests were made at the site and all reacting animals were identified immediately and removed. The areas were maintained on a 30 day retest basis so that all infection could be eliminated in a 90- to 120-day period.

Minnesota was selected as a training station for brucellosis specialists under the direction of the problem herd laboratory located at the University of Minnesota College of Veterinary Medicine. The first two groups of 12 verterinarians have received an intensive 2-week training under this program and have returned to their respective stations to initiate and accelerate a problem herd program.

The MCT program has expanded rapidly in the South St. Paul stockyard, but the majority of the animals are of dairy type and under the surveillance of the BRT program.

The Minnesota Livestock Sanitary Board agreed to discontinue complete area testing starting in the fall of 1964. Under the new arrangement only those herds not supported by negative ring tests will be required to test on the farm. It is anticipated that the revised program will eliminate as much as 80 percent of the testing in dairy areas. Further action by the Minnesota Livestock Sanitary Board has resulted in the establishment of regulations covering the validated Brucellosis-Free Area program for swine. Farmer interest in this program is beginning to be recognized. An acceleration of this phase of the eradication program, especially in areas that are free or actively working toward free status, will be beneficial.

MISSISSIPPI

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	113,201	97,908	-13.5
Reactor Herds-Lots	6,302	5,605	-11.1
Percent	5.6	5.7	(+0.1)
Cattle Tested	309,985	275,176	-11.2
Reactor Cattle	11,509	10,121	-12.1
Percent	3.7	3.7	(0.0)
Ring Tests			
Herd Tests	22,956	16,355	-28.8
Suspicious Herd Tests	1,038	514	-50.5
Percent	4.5	3.1	(-1.4)
Vaccinations (Calfhood)	114,451	121,499	+6.2
Certification of Counties			
Modified Certified			
New and Reinstated	2	1	
Removed	1	1	
Total	47	47	
Certified Brucellosis-Free			
New	0	0	
Total	0	0	
Total Certified Counties	47	47	

( ) % Difference

During 1964 more progress was made in brucellosis eradication in Mississippi than is recognized in the statistics. There was a continued reduction in the percentage of BRT suspicious herds in spite of the fact that the dairy herds are becoming fewer but larger. The State has taken action this year to enforce the quarantine of infected herds, which should reduce spread of brucellosis through trading practices; in addition, the State has been successful in obtaining the necessary legal action to complete the testing of herds that have delayed progress in areas striving for certification. Consideration is being given to drafting laws or regulations that will require dealers to maintain identity of the herds of all animals they buy and sell.

Market cattle testing information has been used in the recertification of several counties this year. To obtain the full benefit of MCT in the State it will be necessary that identification procedures be refined to insure that the backtag identifies the herd of origin rather than the livestock dealer delivering the animal to market.

Lack of funds for support of program activities continued to a major factor in slowing the eradication of brucellosis in the State. Sufficient funds are not available to provide the necessary personnel to do the work or provide fees for practitioners to test promptly infected herds disclosed by MCT and move into new counties.

MISSOURI

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	28,184	32,330	+14.7
Reactor Herds-Lots	1,358	1,255	-7.6
Percent	4.8	3.9	(-0.9)
Cattle Tested	391,165	470,880	+20.4
Reactor Cattle	2,741	2,383	-13.1
Percent	0.7	0.5	(-0.2)
Ring Tests			
Herd Tests	90,490	96,628	+6.8
Suspicious Herd Tests	803	785	-2.2
Percent	0.9	0.8	(-0.1)
Vaccinations (Calfhood)	319,991	382,691	+19.6
Certification of Counties			
Modified Certified			
New	9	0	
Total	114	114	
Certified Brucellosis-Free			
New	0	0	
Total	0	0	
Total Certified Counties	114	114	

( ) % Difference

Both BRT and herd blood tests indicate that the incidence of brucellosis in Missouri has been reduced slightly during the past year. It has been very difficult to complete the testing necessary to recertify several counties prior to the target date for maintaining their status. For several years there have been plans to start a market cattle testing program with the information available from the results of the tests regularly being conducted on animals at markets.

Each year more than 100,000 cattle are tested at markets and the herds of origin of any reactors are tested; this testing no doubt has been a factor in reducing the infection in the State. However, until slaughter animals, which would probably show a higher incidence of disease, can be identified as to their herd of origin, it is questionable that much real progress can be made. Area testing for recertification is slow and costly. Without a complete MCT program, funds and manpower are inadequate to move toward the goal of complete eradication any faster.

MONTANA

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	21,173	24,896	+17.6
Reactor Herds-Lots	121	116	-4.1
Percent	0.6	0.5	(-0.1)
Cattle Tested	83,863	118,960	+41.9
Reactor Cattle	226	224	-0.9
Percent	0.3	0.2	(-0.1)
Ring Tests			
Herd Tests	9,273	9,692	+4.5
Suspicious Herd Tests	26	20	-23.1
Percent	0.3	0.2	(-0.1)
Vaccinations (Calfhood)	250,787	297,133	+18.5
Certification of Counties			
Modified Certified			
New	0	2	
Total	54	54	
Certified Brucellosis-Free			
New	0	0	
Total	0	0	
Total Certified Counties	54	54	

( ) % Difference

Montana became the thirty-sixth State to attain Modified Certified Brucellosis Area status on April 1, 1964. This is a notable achievement because much of the opposition to a test and slaughter program has been centered in the southeastern corner of the State. Although the incidence of brucellosis has never been extremely high, many of the ranchers supported a "vaccination only" program and were strenuously opposed to an eradication program.

The results of the market cattle testing program are extremely encouraging. The return of blood samples from back tagged cattle has increased, so that now over 80 percent of those tagged during the latter part of the year were blood tested. This is a notable accomplishment since the majority of slaughter cattle are shipped to out-of-State points. All livestock markets are cooperating with this program and the railroads have been contacted and requested to supply the names of ranchers making direct shipments from ranch to slaughter establishments. When they are notified by the railroad, livestock inspectors will apply back tags on these cattle prior to shipment.

The cattlemen have indicated an interest in strengthening the market cattle testing program by blood testing cattle purchased at the salesyards for replacement purposes.

A problem herd program was instituted during 1964. Under this program all known infected herds are thoroughly studied from an epidemiological standpoint and a battery of supplemental tests are performed on all samples collected from these herds. The number of infected herds is steadily decreasing and an increased effort will be made to eliminate all reservoirs of the disease with proven problem herd testing procedures.

NEBRASKA

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	22,020	20,907	-5.1
Reactor Herds-Lots	681	675	-0.9
Percent	3.1	3.2	(+0.1)
Cattle Tested	285,346	278,350	-2.5
Reactor Cattle	1,502	1,703	+13.4
Percent	0.5	0.6	(+0.1)
Ring Tests			
Herd Tests	48,290	47,649	-1.3
Suspicious Herd Tests	225	252	+12.0
Percent	0.5	0.5	(0.0)
Vaccinations (Calfhood)	347,645	382,682	+10.1
Certification of Counties			
Modified Certified			
New	4	2	
Total	61	63	
Certified Brucellosis-Free			
New	0	0	
Total	0	0	
Total Certified Counties	61	63	

( ) % Difference

Progress in Nebraska has been very slow during the year. There has been a slight increase in both the percent of reactor cattle found and the percent of BRT suspicious herds.

Continuing effort is being made to inaugurate a full MCT program at markets; however, this has not been accepted by the cattlemen. Recently there has been an encouraging interest by the industry in the possibility of MCT for certification. This may be partially due to the economic loss suffered by some of the industry leaders in noncertified areas where tests were required before permission to ship stocker cattle to modified certified States was wanted.

Calf vaccination increased ten percent during the year; however, much of this is done primarily to prepare feeders for interstate movement.

Lack of funds for support of the brucellosis program are a definite factor in delaying progress. However, with the adoption of MCT, the funds available could probably be much more effectively used.

The State has requested legislation requiring dealers to maintain identity of animals purchased. This, in conjunction with the more favorable attitude of the industry toward MCT, should be a stimulus to the eradication of brucellosis from the State.

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	1,561	1,080	-30.8
Reactor Herds-Lots	18	15	-16.7
Percent	1.2	1.4	(+0.2)
Cattle Tested	20,867	19,934	-4.5
Reactor Cattle	29	22	-24.1
Percent	0.1	0.1	(0.0)
Ring Tests			
Herd Tests	726	601	-17.2
Suspicious Herd Tests	1	1	0.0
Percent	0.1	0.2	(+0.1)
Vaccinations (Calfhood)	49,346	68,491	+38.8
Certification of Counties			
Modified Certified			
New	0	0	
Total	15	10	
Certified Brucellosis-Free			
New	2	5	
Total	2	7	
Total Certified Counties	17	17	

( ) % Difference

Nevada has made good progress in the Certified Brucellosis-Free Area phase of the brucellosis eradication program. During 1964 six new areas, including the Pyramid Indian reservation, qualified as Certified Brucellosis-Free areas. The target date for statewide certified-free status remains December 1965.

The market cattle testing program has been strengthened during the year by authorization of 22 brand inspectors and one A.D.E. contract inspector to apply back tags on cattle shipped for slaughter. This will be of value in reducing the amount of "down-the-road" testing and will enable Nevada to keep close surveillance on these herds. Many of the animals tested under MCT are reclassified as suspects after the owner of the herd of origin is interviewed. It is estimated that 47 percent of the animals showing a titer of 1:100 or higher do not indicate Brucella infection on the basis of the information obtained in these interviews.

Considerable publicity has been given to the benefits that can be derived by vaccinating heifer calves at an early age. An effort is being made to inform the public of the desirability of vaccinating dairy heifers between 3 and 6 months of age and beef heifers between 3 and 8 months of age. Compliance with these recommendations should aid in reducing the number of retained vaccinal titers and eliminate the complication of masking active infection in animals with low residual titers.

NEW HAMPSHIRE

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	4,317	4,073	-5.7
Reactor Herds-Lots	15	12	-20.0
Percent	0.3	0.3	(0.0)
Cattle Tested	54,993	53,407	-2.9
Reactor Cattle	20	19	-5.0
Percent	0.1	0.1	(0.0)
Ring Tests			
Herd Tests	4,210	3,995	-5.2
Suspicious Herd Tests	12	26	+116.6
Percent	0.3	0.7	(+0.4)
Vaccinations (Calfhood)	11,475	10,071	-12.3
Certification of Counties			
Modified Certified			
New	0	0	
Total	0	0	
Certified Brucellosis-Free			
New	0	0	
Total	10	10	
Total Certified Counties	10	10	

( ) % Difference

Annual blood tests of all eligible cattle continued to be conducted in New Hampshire. During the last year the frequency of the ring test was increased from three to four. Under this effective surveillance program no extensive problems with brucellosis have been disclosed. An occasional infected herd is detected and the source of the disease can usually be traced through purchased additions from out-of-state points. No immediate plans have been formulated to deemphasize the required annual blood test in favor of a MCT program. Any transition of this scope would require revision of the existing program and the development of new attitudes for disease control.

Limited service on the collection of swine blood samples from slaughter plants would indicate that Brucella infection among swine is not prevalent in New Hampshire. Continued emphasis on calf vaccination in New Hampshire is not considered an important aspect of the brucellosis eradication program at the present time. However, no concerted effort will be made to deemphasize calf vaccination practices until the surrounding states relax their import requirements. New Hampshire is a source of many replacement animals for southern New England and New York and, thus must maintain a high level of vaccination to protect these markets.

NEW JERSEY

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	4,724	4,751	+0.6
Reactor Herds-Lots	118	92	-22.1
Percent	2.5	1.9	(-0.6)
Cattle Tested	86,807	101,674	+17.1
Reactor Cattle	191	135	-29.4
Percent	0.2	0.1	(-0.1)
Ring Tests			
Herd Tests	6,701	6,382	-4.8
Suspicious Herd Tests	50	135	+170.0
Percent	0.7	2.1	(+1.4)
Vaccinations (Calfhood)	14,624	13,606	-7.0
Certification of Counties			
Modified Certified			
New	0	0	
Total	9	9	
Certified Brucellosis-Free			
New	2	0	
Total	12	12	
Total Certified Counties	21	21	

( ) % Difference

New Jersey continues to work toward the establishment of Certified Brucellosis-Free Areas and has set a target date of August 1966 for statewide certification. During last year the number of reactors found was reduced by almost 30 percent and the number of reactor herds was reduced by over 20 percent, while the average number of reactors disclosed per infected herd was 1.5. Officials in New Jersey believe that vaccinating calves over the recommended age limits may be a major factor in the occurrence of these reactions.

A survey on the effectiveness of the market cattle testing program was made in 1964. The results of this study indicated that MCT under New Jersey conditions was more costly than other screening and surveillance methods previously utilized because of the extensive duplication. Many of the beef herds have been tested annually under the certified herd program and the dairy herds are included in the ring test program.

Representatives for the swine industry have not indicated a willingness to expand the Validated Brucellosis-Free swine program. The majority of the swineherds in New Jersey are recognized garbage feeding establishments and are currently engaged in the hog cholera eradication program. The operators of these farms are not interested in undertaking another eradication program at this time. Furthermore, urban development is approaching many of the traditionally swine-producing areas, with the result that the development of future disease programs is unpredictable.

NEW MEXICO

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	16,020	15,254	-4.8
Reactor Herds-Lots	51	99	+94.1
Percent	0.3	0.6	(+0.3)
Cattle Tested	53,627	56,038	4.5
Reactor Cattle	152	317	+108.6
Percent	0.3	0.6	(+0.3)
Ring Tests			
Herd Tests	821	1,338	+63.0
Suspicious Herd Tests	7	13	+85.7
Percent	0.9	1.0	(+0.1)
Vaccinations (Calfhood)	30,316	17,534	-42.2
Certification of Counties			
Modified Certified			
New	0	0	
Total	32	32	
Certified Brucellosis-Free			
New	0	0*	
Total	0	0	
Total Certified Counties	32	32	

*Indian Reservation.

( ) % Difference

Although New Mexico has not established a target date for attaining statewide Certified Brucellosis-Free status, two of the four Indian reservations in New Mexico achieved this distinction in 1964. The brucellosis ring test is conducted four times a year on all dairy herds in the State. The percentage of suspicious ring tests increased slightly but is providing better surveillance in the dairy areas; this permits the prompt detection of new infection. The market cattle testing program is not as satisfactory as desired because many of the animals covered under this program are sold to feed lots for finishing prior to slaughter. The number of cattle being backtagged at the auction markets continues to increase but the recovery rate of blood samples from the back tagged animals is still low.

The laboratory in New Mexico has been equipped to perform the standard tube agglutination test in preparation for working toward free status. The availability of the standard tube agglutination test will provide additional diagnostic ability to detect the few infected animals which are missed on the plate agglutination test.

Calf vaccination at public expense was discontinued on June 1, 1964. At that time all fee basis vaccination was discontinued regardless of the herd status. This action was later modified to permit owners of infected herds to request vaccination of replacement heifer calves at public expense. It is expected that this change will reduce the number of calves vaccinated for brucellosis and may be the preliminary step in phasing out vaccination in areas with a low incidence of brucellosis.

New Mexico does not have an intensive program for the control and eradication of swine brucellosis, and there are no plans at the present time to expand this program on an area basis. Voluntary herd validation is available to anyone interested. The first swineherd in New Mexico qualified for Validated Brucellosis-Free status during the year.

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	7,908	10,342	+30.8
Reactor Herds-Lots	477	347	-27.3
Percent	6.0	3.4	(-2.6)
Cattle Tested	121,773	119,237	-2.1
Reactor Cattle	1,108	500	-54.9
Percent	0.9	0.4	(-0.5)
Ring Tests			
Herd Tests	90,909	101,165	+11.3
Suspicious Herd Tests	232	203	-12.5
Percent	0.3	0.2	(-0.1)
Vaccinations (Calfhood)	251,006	242,240	-3.5
Certification of Counties			
Modified Certified			
New	0	0	
Total	58	49	
Certified Brucellosis-Free			
New	0	9	
Total	4	13	
Total Certified Counties	62	62	

( ) % Difference

New York is expanding its surveillance and screening procedures in an effort to detect and eliminate the last reservoirs of brucellosis from the livestock population. Market cattle testing has been on a voluntary basis; all the back tagging has beenperformed by the owner on the farm of origin. The results of this program have been discouraging in New York as well as in other State where this system has been tried. During the latter part of 1964 three of the larger livestock markets began back tagging all eligible cattle received. Other markets in New York are planning to incorporate this service as part of their operation in the near future and all markets will be cooperating in MCT during 1965.

The problem herd program continues to function effectively in eliminating infection from problem herds. At the close of 1964 and 60 herds were classified as problems under this program. This represents a reduction of 75 herds during the last six minths of this year. In addition to the detailed epidemiological studies conducted on herds enrolled in this program, samples from all animals with blood titers of complete at 1:50 or higher are subjected to the battery of supplemental tests. The added expense of this procedure can be justified by the prompt detection of newly infected herds.

The progress being made toward establishing statewide Certified Brucellosis-Free Area status is extremely encouraging. Last year nine additional counties were added to the four counties previously certified, making a total of 13 counties now in this status.

The implementation of efficient screening procedures and an effective problem herd program permits a reevaluation of the necessity for emphasizing calf vaccination. At the present time, plans are being formulated to rescind the requirement for cattle in intrastate or interstate commerce to be officially vaccinated, and thus deemphasize calf vaccination. At this point in the eradication program the difficulty encountered in distinguishing between vaccinal reactions and reactions due to infection is an unnecessary hazard. Problem herd studies have shown beyond question that infected vaccinated animals have complicated the eradication program.

NORTH CAROLINA

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	22,155	20,527	-7.4
Reactor Herds-Lots	200	240	+20.0
Percent	0.9	1.2	(+0.3)
Cattle Tested	308,700	303,375	-1.7
Reactor Cattle	523	541	+3.4
Percent	0.2	0.2	(0.0)
Ring Tests			
Herd Tests	19,709	18,928	-4.0
Suspicious Herd Tests	48	118	+145.8
Percent	0.2	0.6	(+0.4)
Vaccinations (Calfhood)	23,895	27,535	+15.2
Certification of Counties			
Modified Certified			
New	0	0	
Total	91	87	
Certified Brucellosis-Free			
New	2	4	
Total	9	13	
Total Certified Counties	100	100	

( ) % Difference

The incidence of brucellosis in North Carolina is low, as would be expected in a State certified for many years. Four additional counties attained Certified Brucellosis-Free Area status this year. The bulk of the reactors found were located in 18 herds, which would indicate that the infection has been confined. All of the herds marketing milk are covered by BRT and any reaction is considered suspicious; even then only 0.6 percent are BRT suspicious.

During 1964 MCT coverage was increased and further improvements are planned for the current year. There is some duplication in that about one in five MCT animals is already represented in a BRT test. Of the MCT animals found showing a 1:100 titer, only about 1 percent are classed as suspects because vaccination was not a part of the program for many years. Adequate record keeping by market operators made possible tracing of every reactor disclosed on MCT and each of these herds of origin was tested.

There are no recognizable obstacles to achieving complete eradication of brucellosis by 1972 and with the continued improvement of MCT, the State should achieve that goal long before that date.

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	50,522	35,968	-28.8
Reactor Herds-Lots	625	787	+25.9
Percent	1.2	2.2	(+1.0)
Cattle Tested	214,864	202,056	-6.0
Reactor Cattle	1,508	2,263	+50.1
Percent	0.7	1.1	(+0.4)
Ring Tests			
Herd Tests	42,432	42,126	-0.7
Suspicious Herd Tests	146	193	+32.2
Percent	0.3	0.5	(+0.2)
Vaccinations (Calfhood)	266,705	266,898	+0.1
Certification of Counties			
Modified Certified			
New and Reinstated	3	3	
Removed	1	0	
Total	50	53	
Certified Brucellosis-Free			
New	0	0	
Total	0	0	
Total Certified Counties	50	53	

( ) % Difference

Certification of the entire State of North Dakota as a Modified Certified Brucellosis Area in December 1964 marked the achievement of a long established goal. Approximately one-half of the State had been certified for more than ten years but insufficient funds, manpower, and industry interest prevented more rapid progress in completion of the testing necessary for certification.

Slightly higher brucellosis infection rates were found both by the BRT and by cattle blood tests. The BRT is conducted three times a year on about 85 percent of the herds marketing milk or cream. There are many herds in the State which market their milk as cream on a somewhat seasonal basis, which accounts for the lower coverage.

Market cattle testing is being further developed in the State; however, at the present time almost 80 percent of the cattle tested by the MCT program are also tested by the BRT. Locating the herd of origin of MCT reactors has not been a serious problem; however, State regulations allow 120 days after a reactor is removed before a herd test can be required.

Calf vaccination is required on all animals imported into the State and since this law was only recently enacted, there are no plans to make changes at this time. It is possible that subsequent revision in the brucellosis law would include requirements for maintaining the identity of cattle handled by dealers.

Continuing eradication efforts through screening tests should reduce the incidence of brucellosis in the State and no obstacles that would prevent complete eradication of brucellosis from North Dakota by 1972 are foreseen.

OHIO

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	62,821	50,170	-20.1
Reactor Herds-Lots	1,049	744	-29.1
Percent	1.7	1.5	(-0.2)
Cattle Tested	262,650	250,187	-4.8
Reactor Cattle	2,143	1,410	-34.2
Percent	0.8	0.6	(-0.2)
Ring Tests			
Herd Tests	92,480	84,353	-8.8
Suspicious Herd Tests	1,067	941	-11.8
Percent	1.2	1.1	(-0.1)
Vaccinations (Calfhood)	83,857	76,516	-8.8
Certification of Counties			
Modified Certified			
New	8	8	
Total	80	88	
Certified Brucellosis-Free			
New	0	0	
Total	0	0	
Total Certified Counties	80	88	

( ) % Difference

Ohio attained statewide Modified Certified Brucellosis Area status on June 19, 1964. All livestock markets are cooperating in MCT by back tagging all cattle. Approximately 50 percent of the blood samples collected under the MCT program are from cattle of the dairy breeds that were previously covered under the BRT program and a high percentage of the animals disclosing a reaction at 1:100 or higher are reclassified as suspects after interviews with the owner of the herd of origin. The tracing procedures have been strengthened with the adoption of a State regulation, effective November 1, 1964, requiring dealer identification on all animals traded or sold. This provision will provide the necessary information for identifying the herd of origin of the animals disclosing a significant reaction on market cattle test samples. State officials plan to submit additional recommendations to the State legislators next year to further strengthen the existing brucellosis law.

The marked reduction in the number of quarantined herds has permitted the elimination of the mobile trailer laboratories in outlying areas. The consolidation of the test records and laboratory service at the Reynoldsville laboratory will greatly assist development of a comprehensive problem herd program for all areas of the State. This program can best be administered through a central laboratory where standardized test procedures can be accomplished under close supervision.

OKLAHOMA

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	32,234	74,153	+130.0
Reactor Herds-Lots	4,188	7,085	+69.2
Percent	13.0	9.6	(-3.4)
Cattle Tested	405,875	508,061	+25.2
Reactor Cattle	10,226	14,758	+44.3
Percent	2.5	2.9	(+0.4)
Ring Tests			
Herd Tests	11,067	11,984	+8.3
Suspicious Herd Tests	482	304	-36.9
Percent	4.4	2.5	(-1.9)
Vaccinations (Calfhood)	191,590	231,741	+21.0
Certification of Counties			
Modified Certified			
New	6	3	
Total	15	18	
Certified Brucellosis-Free			
New	0	0	
Total	0	0	
Total Certified Counties	15	18	

( ) % Difference

Oklahoma is handicapped by having been one of the last States to start an active area brucellosis eradication program. The incidence of brucellosis is high; over ten percent of the reactors found in the United States in 1964 were in Oklahoma.

The BRT is performed three times annually and includes about 90 percent of the dairy herds. Suspicious ring tests are decreasing slowly. One-third of the BRT herds are represented by cream samples.

Market cattle testing is expanding rapidly in the State. It is anticipated that additional counties will be certified by this means as the information becomes available. The explosive growth of MCT has made prompt testing of the herds of origin of the reactors very difficult. Adequate manpower to test the herds of origin of reactor animals is not available in many areas. Emphasis is placed on testing these herds in the areas that are modified certified or close to attaining that status. MCT is without question the answer for brucellosis eradication in Oklahoma. Through continued work with the producers and market operators, the program is becoming more efficient each month.

Calf vaccination is at a high level in the State; almost one-quarter million calves were vaccinated during the year. It must be recognized that this phase of the program should not be extended for a long time since with adequate screening methods infection can be found quickly and the need for vaccination will be reduced along with the probability of exposure to brucellosis.

Although much work remains to be done in Oklahoma, it is anticipated that the State should achieve complete eradication of brucellosis by 1972.

OREGON

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	40,901	43,386	+6.1
Reactor Herds-Lots	224	172	-23.2
Percent	0.5	0.4	(-0.1)
Cattle Tested	132,160	133,445	+1.0
Reactor Cattle	420	273	-35.0
Percent	0.3	0.2	(-0.1)
Ring Tests			
Herd Tests	14,723	13,432	-8.8
Suspicious Herd Tests	185	191	+3.2
Percent	1.3	1.4	(+0.1)
Vaccinations (Calfhood)	159,171	144,412	-9.3
Certification of Counties			
Modified Certified			
New	0	0	
Total	36	36	
Certified Brucellosis-Free			
New	0	0	
Total	0	0	
Total Certified Counties	36	36	

( ) % Difference

Oregon is progressing rapidly toward statewide Certified Brucellosis-Free Area status as the incidence of brucellosis in both dairy and beef areas continues to decrease. Effective MCT and BRT surveillance programs have been instrumental in the prompt detection of new foci of infection. Problem herd studies on many of the herds detected under the screening programs have assisted in the rapid elimination of Brucella infection. An indication of the effectiveness of the programs presently in force in Oregon is the fact that only four newly infected herds were found during the first quarter of 1964 and all were dairy herds with only one reactor each.

Oregon is continually striving to improve the existing programs and has instituted some changes in the MCT program to increase the number of animals screened under this procedure. Portland Union Stockyards has presented some problems in the past in that the animals were not always properly identified before sale to slaughter establishments. During the year national back tags with serial letters were issued to each of the commission firms to be applied on all slaughter type cattle handled by these commission firms. Tracing is readily accomplished when this system is used to identify the herd of origin through the commission firm's records. The ring test, conducted at three month intervals, has shown a steady decrease each year in the number of suspicious herds. During the second quarter of 1962, 2.8 percent of the dairy herds were suspicious on the ring test, but during this same quarter of 1963 and 1964, the percentage of suspicious ring test reactions dropped to 1.03 percent in 1963 and 0.80 percent in 1964.

In view of the progress made in the past, Oregon has established definite target dates for 18 out of 36 counties. It is anticipated that one-half of the State will be declared Certified Brucellosis-Free by July 1967.

PENNSYLVANIA

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	36,119	35,988	-0.4
Reactor Herds-Lots	288	227	-21.2
Percent	0.8	0.6	(-0.2)
Cattle Tested	573,135	562,432	-1.9
Reactor Cattle	544	398	-26.8
Percent	0.1	0.1	(0.0)
Ring Tests			
Herd Tests	68,925	89,536	+29.9
Suspicious Herd Tests	157	221	+40.8
Percent	0.2	0.2	(0.0)
Vaccinations (Calfhood)	139,832	134,139	-4.1
Certification of Counties			
Modified Certified			
New	0	0	
Total	57	55	
Certified Brucellosis-Free			
New	7	2	
Total	10	12	
Total Certified Counties	67	67	

( ) % Difference

Pennsylvania achieved Certified Brucellosis-Free Area status for two additional counties in 1964, bringing the total in this status to 12 out of 67 counties. The current rate of progress in Pennsylvania indicates that the remaining states should achieve statewide brucellosis-free status prior to the estimated target date of December 1972. The problem herd program has been extremely effective in Pennsylvania, with 56 herds enrolled in this program being freed of infection during the year. The utilization of a brucellosis specialist in this phase of the eradication program and his efficiency in the application of supplemental tests is resulting in a rapid reduction in the number of problem herds. At this time, only 30 herds remain in the problem herd category.

The MCT program has been recently initiated at the Pittsburgh Public Stockyards. This is the first step in the development of market cattle testing in Pennsylvania. At present (December 1, 1965) only a few animals have been tested; 72 percent of the samples however were collected from dairy cows previously covered under the ring test.

Since the frequency of the ring test was increased to three times a year, a rapid reduction in the number of suspicious herds has been noted on each succeeding round. The low percentage of infection in most counties would permit them to qualify for brucellosis-free status provided the required blood testing could be accomplished within the 18-month period preceding the request for recertification.

A strong MCT program in conjunction with the BRT program will prevent much of this problem. Blood tests performed during 1964 indicates an almost complete absence of swine brucellosis; this low incidence of swine brucellosis reduces the probability of cross infection in counties that have attained certified-free status.

RHODE ISLAND

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	1,856	1,479	-20.3
Reactor Herds-Lots	4	2	-50.0
Percent	0.2	0.1	(-0.1)
Cattle Tested	9,723	9,876	+1.6
Reactor Cattle	4	2	-50.0
Percent	0.1	0.1	(0.0)
Ring Tests			
Herd Tests	1,219	1,113	-8.7
Suspicious Herd Tests	8	5	-37.5
Percent	0.7	0.4	(-0.3)
Vaccinations (Calfhood)	1,580	1,422	-10.0
Certification of Counties			
Modified Certified			
New	0	0	
Total	5	0	
Certified Brucellosis-Free			
New	0	5	
Total	0	5	
Total Certified Counties	5	5	

( ) % Difference

Rhode Island was declared a Certified Brucellosis-Free Area effective January 20, 1964. During the year two reactors were identified in the State. There have been few, if any, problems in maintaining the Certified Brucellosis-Free status since all imports are subject to retest upon arrival and any animal showing a titer is refused entry.

A program has been initiated for testing other species and has met with good response. Surveillance is accomplished by performing the brucellosis ring test four times a year on all dairy herds and screening cattle at concentration points under the MCT program. Ninety percent of the market cattle samples are obtained from cattle that have also been screened under the ring test. During 1964 all of the animals showing a titer of 1:100 or higher under the market cattle testing program were reclassified as suspects on investigation of the herd of origin and determination of vaccination status. The State requires dealers to identify all animals traded or sold and also requires calf vaccination of all cattle to be sold intrastate or imported. No action is contemplated to rescind either of these requirements.

A swine survey has been conducted which disclosed an incidence of titers at 1:25 or higher of 31 percent. The program for testing other species should clarify the incidence of brucellosis in the swine population of Rhode Island.

SOUTH CAROLINA

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	11,722	24,318	+107.5
Reactor Herds-Lots	372	425	+14.2
Percent	3.2	1.7	(-1.5)
Cattle Tested	135,370	146,717	+8.4
Reactor Cattle	655	655	0.0
Percent	0.5	0.4	(-0.1)
Ring Tests			
Herd Tests	5,164	4,582	-11.3
Suspicious Herd Tests	50	24	-52.0
Percent	1.0	0.5	(-0.5)
Vaccinations (Calfhood)	23,746	24,655	+3.8
Certification of Counties			
Modified Certified			
New	0	0	
Total	45	45	
Certified Brucellosis-Free			
New	1	1	
Total	1	1	
Total Certified Counties	46	46	

( ) % Difference

Although no new counties have attained Certified Brucellosis-Free Area status in South Carolina this year, there has been a continuing reduction in brucellosis in the State, as indicated by both the BRT and blood test results. There should be no problem in completing eradication of brucellosis prior to the time established as the national target date.

All of the dairy herds in the State are covered four times a year by the BRT. Market cattle testing has been expanded greatly during the year and very few markets remain at which backtags are not yet being applied. No difficulties have been encountered in tracing MCT reactors and testing the herds from which they originate.

Few problem herds have been disclosed in the State; however, a district veterinarian has been given training as a brucellosis specialist to speed the cleanup of any problem herds that may be found.

A survey to determine the incidence of brucellosis revealed that over 20 percent of the slaughter sows and boars had a titer of 1:25 or higher, and although this would not necessarily indicate a high incidence of brucellosis, there has been an increased interest by the swine producers of the State in eradicating the disease from their herds. The first swineherd to be completely revalidated on the basis of the revised card test was tested and found negative in July 1964. Much of the correlation testing to establish the effectiveness of the card test was done in conjunction with field testing in the State.

SOUTH DAKOTA

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	35,704	40,667	+13.9
Reactor Herds-Lots	1,224	1,279	+4.5
Percent	3.4	3.1	(-0.3)
Cattle Tested	203,773	213,143	+4.6
Reactor Cattle	2,494	2,876	+15.3
Percent	1.2	1.3	(+0.1)
Ring Tests			
Herd Tests	37,297	34,137	-8.5
Suspicious Herd Tests	447	621	+38.9
Percent	1.2	1.8	(+0.6)
Vaccinations (Calfhood)	330,058	380,629	+15.3
Certification of Counties			
Modified Certified			
New and Reinstated	5	1	
Removed	1	0	
Total	36	37	
Certified Brucellosis-Free			
New	0	0	
Total	0	0	
Total Certified Counties	36	37	

( ) % Difference

The South Dakota Stock Growers Association is developing recommendations for legislation to be presented to the State legislature. The attitude of the majority of the livestock raisers is changing and they are aware of the need to become a Modified Certified Brucellosis Area. The passage of a workable brucellosis law is imperative as a prerequisite for rapid progress in the eradication program. Under the present law, there is no authority to require herds of origin of market cattle test reactors to test if located in a nonprogram county. Consequently, most of the owners of these herds refuse to submit their animals for blood testing. Furthermore, an unfavorable ruling by a judge was received concerning the State's right to test a herd under area test when an owner refused. This ruling along with the unfavorable attitude of some stockmen in South Dakota made it impractical to attempt continued area testing under the present statutes. The present attitude of the Stock Growers Association is extremely encouraging and the backing of this group will make further progress in the program possible.

The MCT program was strengthened and expanded when the commission firms at the Sioux Falls stockyards signed contracts to backtag cattle. In addition, contracts have been signed at three salesyards and other salesyards have been contacted but no agreement has been reached as yet.

During December, Wind Cave National Park started on its longrange brucellosis eradication program, the first phase of which was the reduction in the size of the herd. During the fall they slaughtered 182 animals which were blood tested, disclosing 33 reactors and 35 suspects. In addition, eighty-four animals were slaughtered from the herd located at Custer State Park. Brucellosis blood tests on these animals disclosed two reactors and four suspects. An intensive vaccination program is being conducted.

TENNESSEE

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	85,171	37,538	-55.9
Reactor Herds-Lots	2,701	2,104	-22.1
Percent	3.2	5.6	(+2.4)
Cattle Tested	196,807	151,765	-22.9
Reactor Cattle	5,520	4,801	-13.0
Percent	2.8	3.2	(+0.4)
Ring Tests			
Herd Tests	63,110	80,865	+28.1
Suspicious Herd Tests	1,440	1,139	-20.9
Percent	2.3	1.4	(-0.9)
Vaccinations (Calfhood)	152,677	166,674	+9.2
Certification of Counties			
Modified Certified			
New	0	0	
Total	95	95	
Certified Brucellosis-Free			
New	0	0	
Total	0	0	
Total Certified Counties	95	95	

( ) % Difference

Tennessee is emphasizing changes in its program to strengthen the existing screening measures. The market cattle testing program has been proven again and again to be an effective method for determining foci of brucellosis infection. Under this program practically all of the farm testing has been eliminated except in those herds where evidence of Brucella infection is suspected.

It is gratifying to report a continual downward trend in the percentage of suspicious ring test herds disclosed. This trend is expected to continue because of the prompt testing and removal of reactors and the effective utilization of the problem herd program procedures.

The problem herd program has significantly contributed to the reduction in the incidence of brucellosis. Numerous herds have been freed of the disease by application and interpretation of supplemental tests. During 1964 the frequency of the BRT was increased from two to three times a year and livestock dealers were more cooperative by keeping better records on herds of origin of marketed cattle. These factors will materially aid the eradication program. No serious obstacles are foreseen which will delay the established goal of eradication of brucellosis in Tennessee.

TEXAS

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	366,386	220,977	-39.7
Reactor Herds-Lots	15,047	8,928	-40.7
Percent	4.1	4.0	(-0.1)
Cattle Tested	975,074	1,078,420	+10.6
Reactor Cattle	23,162	22,750	-1.8
Percent	2.4	2.1	(-0.3)
Ring Tests			
Herd Tests	13,444	14,179	+5.5
Suspicious Herd Tests	616	537	-12.8
Percent	4.6	3.8	(-0.8)
Vaccinations (Calfhood)	398,393	345,473	-13.3
Certification of Counties			
Modified Certified			
New and Reinstated	15	15	
Removed	2	4	
Total	106	117	
Certified Brucellosis-Free			
New	0	0	
Total	0	0	
Total Certified Counties	106	117	

( ) % Difference

The Market Cattle Testing program in Texas has expanded rapidly during 1964. As an illustration of the extent to which this program has expanded, in February, 298 back tagged cattle were bled at slaughter establishments. In November of 1964, 40,323 samples from back tagged animals were tested. Much of the credit for this rapid expansion belongs to the Meat Inspection Division in Texas and surrounding States for their cooperation in collecting samples at the slaughter establishments. Back tags are being applied at approximately 125 salesbarns and four stockyards in Texas. The success of this program will alleviate the necessity of "down-the-road" testing in many areas of the State.

The brucellosis eradication program in Texas has been proceeding from north to south and east to west and is now approaching the more concentrated livestock populated areas. No definite goals have been established for statewide Modified Certified Brucellosis Area status since many counties have not yet passed petitions for beginning area work. Market cattle reactors traced to herds of origin that are not located in area counties are not followed through promptly for entire herd tests. The emphasis has been placed on those counties currently engaged in area work or petitioning for the establishment of area work status rather than in nonarea counties. This is necessary due to limitations of available personnel, the large number of herds and cattle in the area presently under test, and a greater incidence of infection in the eastern section of the State.

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	10,402	11,643	+11.9
Reactor Herds-Lots	168	64	-61.9
Percent	1.6	0.5	(-1.1)
Cattle Tested	58,751	39,417	-32.9
Reactor Cattle	260	131	-49.6
Percent	0.4	0.3	(-0.1)
Ring Tests			
Herd Tests	15,518	15,380	-0.9
Suspicious Herd Tests	52	34	-34.6
Percent	0.3	0.2	(-0.1)
Vaccinations (Calfhood)	64,052	64,741	+1.1
Certification of Counties			
Modified Certified			
New	0	0	
Total	9	0	
Certified Brucellosis-Free			
New	10	9	
Total	20	29	
Total Certified Counties	29	29	

( ) % Difference

Utah has the distinction of being the first State which has achieved both Certified Brucellosis-Free Area status and Validated Brucellosis-Free Area Status. The swine validation program proceeded much more rapidly than expected because of a significant decrease in the population during the last two years. Many of the areas qualified for validation through the extensive use of a market swine testing program and maximum utilization of the brucellosis card test. The progress was further enhanced by the low incidence of swine brucellosis found in Utah.

Even though Utah has become the first State to achieve both of these goals there is an increased awareness of the need to continue effective screening procedures. During the last year the market cattle testing program activity increased tremendously. More out-of-state cattle than native cattle were back tagged at the Ogden Union Stockyard. This was offset at other markets where the majority of Utah cattle were identified and tagged. An innovation in back tagging procedures was initiated in Utah to assist the identification of hides so that tracing could be accomplished for both brucellosis and tuberculosis. This system, called the "piggyback" method, involved stapling two back tags together before cementing the tag to the animal, then detaching the top tag to identify the blood sample. It is necessary to be continually on the alert for bovine brucellosis if this disease is to be eradicated within the period established by the national goal.

VERMONT

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	2,993	3,216	+7.5
Reactor Herds-Lots	125	60	-52.0
Percent	4.2	1.9	(-2.3)
Cattle Tested	52,468	48,881	-6.8
Reactor Cattle	252	108	-57.1
Percent	0.5	0.2	(-0.3)
Ring Tests			
Herd Tests	19,462	18,671	-4.1
Suspicious Herd Tests	58	28	-51.7
Percent	0.3	0.1	(-0.2)
Vaccinations (Calfhood)	49,617	43,890	-11.5
Certification of Counties			
Modified Certified			
New	0	0	
Total	14	14	
Certified Brucellosis-Free			
New	0	0	
Total	0	0	
Total Certified Counties	14	14	

( ) % Difference

The State of Vermont is expected to qualify for certified-free status by October 1965. At this time, all of the infected herds except one are enrolled in the problem herd program. Supplemental testing and bacteriological studies have been effectively utilized during the past year to reduce the number of infected herds from 25 to 8 since April. The 8 remaining herds are located in six counties. Blood samples from suspicious ring test herds are subjected to supplemental testing and all suspects are required to be retested.

The frequency of the BRT remains three times a year. There is some indication that the ring test may be conducted at three month intervals at a future date; however, no definite plans have been developed.

Vermont still has a mandatory vaccination program but an increasing number of livestock owners are reluctant to maintain this practice. Undoubtedly, the attitude of the livestock owners will soon create the necessity for changing the mandatory clause to one for voluntary participation.

Testing of all swine herds in the State was completed in early 1964. The State attained Validated Brucellosis Free Area status on November 25, 1964, thereby becoming the first State to achieve this goal.

VIRGINIA

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	75,021	83,310	+11.0
Reactor Herds-Lots	1,002	938	-6.4
Percent	1.3	1.1	(-0.2)
Cattle Tested	335,919	264,311	-21.3
Reactor Cattle	1,507	1,295	-14.1
Percent	0.4	0.5	+0.1
Ring Tests			
Herd Tests	26,835	33,558	+25.1
Suspicious Herd Tests	271	438	+61.6
Percent	1.0	1.3	(+0.3)
Vaccinations (Calfhood)	97,150	77,422	-20.3
Certification of Counties			
Modified Certified			
New	0	0	
Total	96	93	
Certified Brucellosis-Free			
New	2	3	
Total	2	5	
Total Certified Counties	98	98	

( ) % Difference

The brucellosis eradication program in Virginia has been strengthened by refining the techniques used in the screening programs. Modifications in the BRT procedure based upon an article appearing in the A.V.M.A. Journal entitled "The Effect of Time and Storage Temperature of Milk on the BRT" were instituted. A review of this paper led to a change in procedure for all milk collected from Grade A dairies. The modification involved the increase in the amount of milk tested with the BRT from 1 ml. to 2 ml. which increases the sensitivity of the test. Under this procedure, a greater number of suspicious ring test herds have been tested.

The testing procedures performed at the stockyards were thoroughly reviewed and standardized. Following this appraisal of the techniques employed in these facilities a marked improvement in the correlation of test results obtained at the stockyards and the Federal laboratories was achieved. The major effect of this has been to detect and interrupt the movement of dangerous animals destined for replacement.

The major obstacle to be overcome in the brucellosis eradication program is the need to fill verterinary vacancies to offset the pressure from other required activities. If the established goals are to be met it is imperative for these vacancies to be filled promptly.

All infected herds are investigated carefully to provide the answer to the following two questions. How did the herd become infected? Where has the infection spread? The emphasis on these two questions will assure rapid progress toward the eradication of brucellosis.

WASHINGTON

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	30,435	38,317	+25.9
Reactor Herds-Lots	259	267	+3.1
Percent	0.9	0.7	(-0.2)
Cattle Tested	173,928	205,475	+18.1
Reactor Cattle	321	301	-6.2
Percent	0.2	0.1	(-0.1)
Ring Tests			
Herd Tests	16,958	14,393	-15.1
Suspicious Herd Tests	88	75	-14.8
Percent	0.5	0.5	(0.0)
Vaccinations (Calfhood)	139,372	89,639	-35.7
Certification of Counties			
Modified Certified			
New	0	0	
Total	39	34	
Certified Brucellosis-Free			
New	0	5	
Total	0	5	
Total Certified Counties	39	39	

( ) % Difference

The change in the Uniform Methods and Rules permitting initial brucellosis-free certification of areas under the market cattle testing program will greatly accelerate the attainment of brucellosis-free status within the State of Washington. The new alternate procedure eliminates the obstacle which prevented Washington from qualifying as a Certified Brucellosis-Free State. The percentage of beef cattle tested under the market cattle testing program is adequate in all but a few counties to meet the requirement for 10 percent of eligible beef cattle screened per year. The existing traceback program has been more than adequate to meet the 90-percent tracing of reactors disclosed under the market cattle testing program. These provisions provided an opportunity to revise the goal for statewide Certified Brucellosis-Free status to December, 1965.

The emphasis in recent years in the brucellosis eradication program has been to fully explore every possible lead in detecting and eliminating new foci of infection. Significant progress in the maintenance of animal identification was made during the year with the adoption of a State regulation requiring the dealers to declare the herd of origin of all animals traded or sold. All suspicious reactions are considered a problem and the herd is automatically included in the problem herd program. The supplemental tests are used extensively to promptly detect possible newly infected herds. This program will continue to assure freedom from brucellosis.

In the past, approximately 20 percent of the market cattle test samples were collected from dairy type animals that were undoubtedly covered by the BRT. In 1964, 270 MCT program animals having a titer of 1:100 or more were disclosed. Of these, 51.8 percent (or 140 animals) were reclassified as suspects on review of herd of origin information. The de-emphasis on vaccination which was accomplished by the livestock industry during the year will eventually reduce this problem. In addition to the de-emphasis on vaccination, the recommendation by the National Committee to vaccinate at early ages will also benefit the reduction in the number of animals retaining vaccinal titers.

WEST VIRGINIA

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	23,488	59,836	+154.8
Reactor Herds-Lots	204	132	-35.3
Percent	0.8	0.2	(-0.6)
Cattle Tested	149,777	136,243	-9.0
Reactor Cattle	367	247	-32.7
Percent	0.2	0.2	(0.0)
Ring Tests			
Herd Tests	8,241	9,218	+11.9
Suspicious Herd Tests	29	39	+34.5
Percent	0.4	0.4	(0.0)
Vaccinations (Calfhood)	8,107	7,732	-4.6
Certification of Counties			
Modified Certified			
New	0	0	
Total	24	20	
Certified Brucellosis-Free			
New	3	4	
Total	31	35	
Total Certified Counties	55	55	

( ) % Difference

West Virginia added four additional counties to those which had previously attained brucellosis-free status. At the close of 1964, over 63 percent of the counties in West Virginia had been declared brucellosis-free areas. However, one county is in danger of losing its free designation because of the tremendous task of recertifying seven counties with the same due date. It is expected that much of the testing data needed to recertify these seven counties will have to be obtained by "down-the-road" testing because MCT results will be inadequate to meet the requirements. Greater use of MCT data for future recertification of counties will be possible because of the increasing number of animals being screened under this procedure.

As this program develops, the problem of initiating certified areas or of recertifying areas will be minimized. Accumulative data available under this program permits a more concentrated effort on work of immediate concern rather than a routine testing schedule of noninfected herds under the area test program. The efficiency of these screening procedures is pointed out by the fact that 10 of the 12 herds under quarantine on December 1 were detected by either the MCT program or the BRT.

The fact that screening tests, because of continuous surveillance, consistently detect infection sooner than an intensive area testing program reemphasizes their value and potential. Routine epidemiological investigations including tests of herds near an infected premise have uncovered several additional reactors. Procedures such as this will hasten the eventual eradication of this disease.

WISCONSIN

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	34,446	31,765	-7.8
Reactor Herds-Lots	555	312	-43.8
Percent	1.6	1.0	(-0.6)
Cattle Tested	301,779	281,027	-6.9
Reactor Cattle	915	517	-43.5
Percent	0.3	0.2	(-0.1)
Ring Tests			
Herd Tests	224,561	251,533	+12.0
Suspicious Herd Tests	502	333	-33.7
Percent	0.2	0.1	(-0.1)
Vaccinations (Calfhood)	545,093	538,633	-1.2
Certification of Counties			
Modified Certified			
New	0	0	
Total	34	8	
Certified Brucellosis-Free			
New	23	26	
Total	38	64	
Total Certified Counties	72	72	

( ) % Difference

Wisconsin has shown remarkable progress in a major dairy area toward attaining Certified Brucellosis-Free Area status. Twenty-six counties were added to the 38 counties which had previously acquired this status, leaving only 8 counties to qualify as brucellosis-free. The remaining 8 counties should complete the testing requirements by June 30, 1965. Recent changes in State statutes provide for much closer supervision of herds by allowing an extension of quarantine, requiring a test of animals of all ages in known infected herds, and condemning cattle, in known infected herds, that have complement-fixation titers but were not classified as reactors on the standard tube agglutination test.

The condemnation, with indemnity, of entire herds where infection is extensive and rapidly spreading has been an extremely important factor toward eradicating brucellosis in Wisconsin. In each of these cases, bacteriologic proof was provided before condennation could be carried out. The effectiveness of the comprehensive program in Wisconsin is reflected by the marked reduction in the number of reactors disclosed during 1964. There were approximately 72-percent fewer reactors in the last six months of 1964 as compared with the last months of 1963.

A survey of brucellosis in swine conducted in the summer of 1964 provided some evidence of a low incidence of infection in this species. During the survey no reactions were disclosed above the 1:25 dilution.

Surveillance programs are being conducted and expanded to provide continual coverage of the cattle within the State of Wisconsin. The MCT and livestock identification program was recently extended to include all cows passing through assembly points.

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	3,820	5,911	+54.7
Reactor Herds-Lots	63	78	+23.8
Percent	1.6	1.3	(-0.3)
Cattle Tested	38,692	51,983	+34.4
Reactor Cattle	100	139	+39.0
Percent	0.3	0.3	(0.0)
Ring Tests			
Herd Tests	2,617	2,117	-19.1
Suspicious Herd Tests	14	10	-28.6
Percent	0.5	0.5	(0.0)
Vaccinations (Calfhood)	136,827	149,402	+9.2
Certification of Counties			
Modified Certified			
New and Reinstated	1	2	
Removed	1	0	
Total	17	19	
Certified Brucellosis-Free			
New	0	0	
Total	0	0	
Total Certified Counties	17	19	

( ) % Difference

Area testing has started in Jackson County, Wyoming. This leaves only one county in the State still in the individual participation phase of the eradication program. A mobile laboratory has been used to assist in testing the blood samples in the field. The test results are made available immediately to accelerate the removal of reactors from the infected herds.

During 1964 two new counties achieved Modified Certified Brucellosis Area status and two additional counties have nearly completed the necessary work to meet these requirements. Objectors to the program were contacted personally by the State Veterinarian in the areas under test to gain their cooperation in completing this phase of the eradication program. The Livestock and Sanitary Board has authorized the State Veterinarian to quarantine and order the testing of the few remaining herds in counties striving for certification if voluntary compliance is not conducted.

The progress being made in expanding the market cattle testing program is better than expected. Backtags are being applied at seven salesyards by State and contract personnel. Full utilization of this program should provide the information needed to continue the recent progress toward eradicating brucellosis.

PUERTO RICO

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	15,485	18,272	+18.0
Reactor Herds-Lots	854	788	-7.7
Percent	5.5	4.3	(-1.2)
Cattle Tested	174,853	212,009	+21.2
Reactor Cattle	2,270	1,655	-27.1
Percent	1.3	0.8	(-0.5)
Ring Tests			
Herd Tests	2,618	3,105	+18.6
Suspicious Herd Tests	85	309	+263.5
Percent	3.2	10.0	(+6.8)
Vaccinations (Calfhood)	19,529	13,345	(-31.7)
Certification of Counties			
Modified Certified			
New	0	0	
Total	72	70	
Certified Brucellosis-Free			
New	2	2	
Total	5	7	
Total Certified Counties	77	77	

( ) % Difference

The import requirements have been amended on all cattle shipments destined for Puerto Rico. To qualify for import, cattle must be tested and found negative on the standard tube agglutination test. The only exception to this requirement will be calves under 6 months of age and vaccinated heifers less than 18 months of age. All tests must be accomplished within 30 days of shipment and the health certificate must indicate the date and test results of the last entire herd test on the herd of origin.

Although no organized attempt has been made to phase out calf vaccination, the number of calves vaccinated is beginning to decrease. This is undoubtedly a result of sporadic talks with farm organizations and individual farmers on the disadvantages of vaccination in areas free or nearly free of brucellosis. It has been pointed out that retained vaccinal titers can cause difficulties in the eradication program by masking active infection and by making it impossible to distinguish between vaccinal titers and infection titers with standard tests.

While the swine validation program has not been emphasized as yet in Puerto Rico, this phase of the brucellosis eradication program has been available on a herd basis. During 1964 the first five swineherds achieved Validated Brucellosis-Free status. Owners of swineherds are encouraged to enroll in this program as an adjunct to the effort being made to eliminate bovine brucellosis.

VIRGIN ISLANDS

Activities	Calendar Year 1963	Calendar Year 1964	Percent Change for 1964
Blood Tests			
Herds-Lots	216	240	+11.1
Reactor Herds-Lots	2	0	
Percent	0.9	0.0	(-0.9)
Cattle Tested	5,636	1,725	-69.4
Reactor Cattle	2	0	
Percent	0.1	0.0	(-0.1)
Ring Tests			
Herd Tests	0	14	
Suspicious Herd Tests	0	0	0.0
Percent	0.0	0.0	(0.0)
Vaccinations (Calfhood)	0	0	0.0
Certification of Counties			
Modified Certified			
New	0	0	
Total	1	0	
Certified Brucellosis-Free			
New	1	1	
Total	2	3	
Total Certified Counties	3	3	

( ) % Difference

No brucellosis reactors were disclosed in Virgin Islands during 1964. On January 21, 1964 they achieved Certified Brucellosis-Free status. Three States had previously attained this status. However, the Virgin Islands is the first territory to accomplish this feat.

Plans have been formulated to complete the brucellosis eradication program of the Virgin Islands by initiating an active program to establish the Virgin Islands as a Validated Brucellosis-Free Area. It is anticipated that the brucellosis card test will be extensively used to accomplish this goal.

The screening programs will continue to provide surveillance of the livestock population to assure that brucellosis is not reintroduced to the islands. All animals slaughtered at the slaughtering establishments located on the island will be tested under this phase of the program.

U S GOVERNMENT PRINTING OFFICE 1965 O—778-198